

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

**STANDARDIZING GENERATOR INTERCONNECTION |
AGREEMENTS AND PROCEDURES |**

DOCKET No. RM02-1-000

**STANDARD GENERATOR INTERCONNECTION
PROCEDURES PREPARED BY THE INTERCONNECTION
PROCEDURES DRAFTING GROUP
AND
STANDARD GENERATOR INTERCONNECTION AND
OPERATING AGREEMENT PREPARED BY THE
INTERCONNECTION AGREEMENT DRAFTING GROUP**

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January 11, 2002

ATTACHMENT 1

STANDARD GENERATOR INTERCONNECTION PROCEDURES

GENERATOR INTERCONNECTION PROCEDURES

**PREPARED BY THE
INTERCONNECTION PROCEDURES DRAFTING COMMITTEE
JANUARY 11, 2002**

PREFACE TO THE GENERATOR INTERCONNECTION PROCEDURES

These *pro forma* Interconnection Procedures have been negotiated and developed by a drafting committee comprised of representatives of the following stakeholder groups: Transmission Owners, Generators, Small Generators, Regional Transmission Organizations, Independent System Operators, Transmission Dependent Utilities and State Commissions (hereinafter referred to as the “Interconnection Procedures Drafting Committee”). Unless otherwise indicated, the proposed language of these Interconnection Procedures has been agreed to by the Interconnection Procedures Drafting Committee. Where the Interconnection Procedures Drafting Committee could not reach agreement, the Interconnection Procedures reflect the differing positions of such stakeholders, i.e., Transmission Owner Position (“TO Position”), Generator Position (“Gen Position”), Small Generator Position (“Small Gen Position”), Regional Transmission Organization/Independent System Operator Position (“RTO/ISO Position”), Transmission Dependent Utility Position (“TDU Position”), or State Commission Position.

It is important to note that several positions expressed within the provisions of these Interconnection Procedures are highly interdependent as to timing and scope of studies and as to obligations and responsibilities of the parties. We would ask that the Commission carefully consider such interdependencies in resolving these positions.

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GENERATOR INTERCONNECTION PROCEDURES¹

TO THE EXTENT THAT ANY PROVISION OF THESE INTERCONNECTION PROCEDURES IS INCONSISTENT WITH ANY TARIFF OR PROCEDURE APPROVED BY THE COMMISSION, THE PROVISIONS OF SUCH TARIFF OR PROCEDURE SHALL GOVERN UNLESS AND UNTIL MODIFIED BY THE COMMISSION.

1. Definitions.

When used in these Generator Interconnection Procedures (“Interconnection Procedures”) with initial capitalization, the terms specified below shall have the meanings indicated. Terms used in these Interconnection Procedures with initial capitalization but not defined in this Section 1 shall have the meanings specified in the Transmission Provider Tariff or the Interconnection and Operating Agreement. In the event that there is an inconsistency between the definitions in the Interconnection and Operating Agreement and the definitions in these Interconnection Procedures, for the purposes of these Interconnection Procedures, the definitions herein shall control.

1.1 Affected System: shall mean a system other than that of Transmission Provider that may be affected by the proposed interconnection to the Transmission System.

1.2 Affected System Operator: shall mean the entity that operates the Affected System.

¹ Best practice may vary based on reasonable state and regional differences. Thus, it is intended that Transmission Providers be permitted to adopt these procedures with variations to accommodate state and regional differences.

Gen and Small Gen Position: However, the Transmission Provider will have the burden of demonstrating that any such variation is necessary and represents a best practice in view of such state and regional differences.

TO and RTO/ISO Position: These procedures do not attempt to imply that substantially comparable interconnection procedures and agreements, which have been previously filed by an RTO/ISO and approved by the Commission, are unacceptable.

- 1.3 Base Case:** shall be as defined in Section 2.3 of these Interconnection Procedures.
- 1.4 Business Days:** shall mean any day on which the Federal Reserve Bank of New York is open.
- 1.5 Commercial Operation Date:** shall mean the date on which the Facility commences commercial operations.
- 1.6 Commission:** shall mean the Federal Energy Regulatory Commission or its successor.
- 1.7 Facility:** shall mean Generator's electric generating facility identified in the Interconnection Request, but shall not include the Generator Interconnection Facilities.
- 1.8 Generator:** shall mean the entity submitting an Interconnection Request.
- 1.9 Generator Interconnection Facilities:** shall mean all facilities and equipment between the Facility and the Point of Interconnection, including any modification, additions or upgrades to such facilities and equipment that are necessary to physically and electrically interconnect the Facility to the Transmission System.
- 1.10 In-Service Date:** shall mean the date upon which the Generator reasonably expects it will be ready to begin use of the Transmission Provider Interconnection Facilities to obtain back feed power and upon which it reasonably expects to begin doing so.
- 1.11 Interconnection and Operating Agreement:** shall mean an agreement in the form of the Interconnection and Operating Agreement included in Appendix 7.

- 1.12 Interconnection Facilities Study:** shall mean a study of the facilities necessary to accommodate the Interconnection Request the scope of which is described in Section 8.2 of these Interconnection Procedures.
- 1.13 Interconnection Facilities Study Agreement:** shall mean the Agreement described in Section 8.1 of these Interconnection Procedures.
- 1.14 Interconnection Feasibility Study:** shall mean a study to evaluate the feasibility of the Generator's interconnection to the Transmission System, the scope of which is described in Section 6.2 of these Interconnection Procedures.
- 1.15 Interconnection Feasibility Study Agreement:** shall mean the Agreement described in Section 6.1 of these Interconnection Procedures.
- 1.16 Interconnection Request:** shall mean a request, in the form of Appendix 1, in accordance with the Tariff, to interconnect a new Facility, or to increase the capacity or make a Material Modification to the operating characteristics of an existing Facility that is interconnected with the Transmission System.
- 1.17 Interconnection Study(ies):** shall mean any and all of the following studies: the Interconnection Feasibility Study, the Interconnection System Impact Study and the Interconnection Facilities Study described in these Interconnection Procedures.
- 1.18 Interconnection Study Agreement(s):** shall mean any and all of the following agreements: the Interconnection Feasibility Study Agreement, the Interconnection System Impact Study Agreement and the Interconnection Facilities Study Agreement described in these Interconnection Procedures.

- 1.19 Interconnection System Impact Study:** shall mean a study of the impact of the Interconnection Request, the scope of which is described in Section 7.3 of these Interconnection Procedures.
- 1.20 Interconnection System Impact Study Agreement:** shall mean the Agreement described in Section 7.1 of these Interconnection Procedures.
- 1.21 Network Upgrades:** shall mean the additions, modifications, and upgrades to the Transmission System required to accommodate the interconnection of the Facility to the Transmission System per the applicable Interconnection Request, including upgrades necessary to remove overloads and voltage criteria violations and upgrades necessary to remedy short-circuit and/or stability problems resulting from the connection of the Facility to the Transmission System.
- 1.22 Material Modification:** shall have the meaning set forth in Section 4.4 of these Interconnection Procedures.
- 1.23 Optional Study:** shall mean a study in addition to the Interconnection Studies as described in Section 10 of these Interconnection Procedures.
- 1.24 Point of Interconnection:** shall mean the physical point or points and voltage level(s) at which the Generator Interconnection Facilities interconnect(s) with the Transmission System.
- 1.25 Reasonable Efforts:** shall mean, with respect to an action required to be attempted or taken by an entity pursuant to these Interconnection Procedures, efforts that are timely and consistent with Good Utility Practice and are otherwise substantially equivalent to those such entity would use to protect its own interests or those of any other Generator.

- 1.26 RTO/ISO:** shall mean any Regional Transmission Organization or Independent System Operator to which a Transmission Owner has transferred operational control of its transmission facilities, or any portion thereof.
- 1.27 Site Control:** shall mean documentation reasonably demonstrating: (i) ownership of, a leasehold interest in, or a right to develop a site for the purpose of constructing a Facility; (ii) an option to purchase or acquire a leasehold site for such purpose; or (iii) an exclusivity or other business relationship between Generator and the entity having the right to sell, lease or grant Generator the right to possess or occupy a site for such purpose.
- 1.28 Small Generators:** shall mean those Generators described in Section 14 of these Interconnection Procedures.
- 1.29 Tariff:** shall mean the Transmission Provider's tariff(s) under which open access transmission and interconnection service are offered, as filed with the Commission, and as amended or supplemented from time to time, or any successor tariff(s).
- 1.30 Transmission Owner:** shall mean the entity that owns, leases or otherwise has a possessory interest in the portion of the Transmission System at the Point of Interconnection, regardless of whether such entity has transferred operational control of such transmission facilities to an RTO/ISO and shall be required to comply with these Interconnection Procedures.
- 1.31 Transmission Provider Interconnection Facilities:** shall mean all facilities and equipment owned and/or controlled and operated by the

Transmission Provider on the Transmission Provider's side of the Point of Interconnection necessary to accommodate the Interconnection Request.

1.32 Transmission Provider: shall mean the entity that operates the Transmission System and is obligated under the Tariff to offer Interconnection Service to a Generator seeking interconnection.

1.33 Transmission System: shall mean the facilities, including any additions, modifications or upgrades made to such facilities, owned, controlled or operated by the Transmission Provider that are used for electric transmission service in interstate commerce under a filed Tariff to which the Generator is requesting interconnection.

2. Scope and Application.

2.1 Application of Interconnection Procedures. Sections 2 through 13 apply to any Interconnection Request. Section 14 establishes the modified procedures for interconnecting Small Generators' Facilities.

2.2 Comparability. The Transmission Provider shall receive, process and analyze all Interconnection Requests in a timely manner as set forth in these Interconnection Procedures. The Transmission Provider will use the same Reasonable Efforts in processing and analyzing Interconnection Requests from all Generators, whether the generating facilities are owned by Transmission Provider, its subsidiaries or affiliates or others.

2.3 Base Case Data. Transmission Provider shall provide

Gen Position: base power flow, short circuit and stability
databases

TO Position: base power flow databases

and contingency lists upon request subject to confidentiality provisions. Such databases and lists, hereinafter referred to as Base Cases, shall include all (i) generation projects and (ii) transmission projects, including merchant transmission projects that are proposed for a Transmission System for which a transmission expansion plan has been submitted and approved by the applicable authority.

2.4 Interconnection Service. [The Interconnection Procedures Drafting Committee believes that these Interconnection Procedures can accommodate many types of interconnection services. The Interconnection Procedures Drafting Committee further believes that all types of interconnection services offered by the Transmission Provider should be clearly and completely defined in any *pro forma* interconnection procedures and any *pro forma* interconnection and operating agreement. Attached hereto is a document entitled the Generator Interconnection Products and Studies document (the "Document"), dated January 7, 2002. The Document was created by a working group separate and apart from the Interconnection Procedures Drafting Committee. The Interconnection Procedures Drafting Committee was not responsible for the Document. The Interconnection Procedures Drafting Committee considers it important that whatever types of interconnection services are deemed appropriate by the Commission should be incorporated in these Interconnection Procedures accordingly.

Gen and Small Gen Position: The Generator and Small Generator members of the Interconnection Procedures Drafting Committee affirm the Document and support the types of

interconnection services specified therein as the minimal acceptable types of interconnection services and will submit their specific comments thereto within their respective filings.

TO and RTO/ISO Position: A well-defined list of products and services is critical to the interconnection process. TOs and RTO/ISOs believe that there may not be a single best or only set of services to achieve standardization of generator interconnection activities, and that the Document needs to be further refined in order to accommodate regional differences such as geography, market design and reliability practices. These parties believe that the Commission should consider the Document in light of the entire consensus building process to date along with any comments filed in writing.

TDU Position: TDUs do not accept the Document as a consensus document. Nonetheless, the premise behind it has merit.

A national model for interconnections should recognize regional as well as evolutionary market development differences in mandating interconnection service. The following definitions, applied in accordance with the procedures of this document, could address multiple products and regional differences.

Network Resource Interconnection Service allows a generator to connect its Facility to the Transmission Provider's Transmission System and integrate the Facility to satisfy Transmission System reliability, stability and operability standards in a manner comparable to that in which the Transmission Provider integrates generating facilities to serve native load customers. This level of interconnection service will allow a generator to fully participate in the applicable market.

Optional Interconnection Service allows a generator to connect its Facility to the Transmission Provider's Transmission System and be eligible to deliver market-based products. This may involve single or multiple interconnection services which are sufficient to allow interconnection and broad market participation, subject to market-based mechanisms. The specific characteristics and requirements for such service will be market-driven and directly related to the specific market region.]

2.5 No Applicability to Transmission Service.

TO Position: Nothing in these Interconnection Procedures shall constitute a request for transmission service or confer upon a Generator any right to receive transmission service.

Gen Position: Nothing in these Interconnection Procedures shall constitute a transmission service request.

3. Interconnection Requests.

3.1 Identification of Types of Interconnection Services. At the time the Interconnection Request is submitted, Generator must identify the types of interconnection services requested; provided, however, any Generator requesting network or similar type of interconnection service as specified by the Commission may also request that it be concurrently studied as an Energy Resource, up to the point when

Gen Position: an Interconnection Facility Study Agreement is executed.

TO Position: a System Impact Study Agreement is executed and returned to the Transmission Provider.

3.2 General. A Generator shall submit to the Transmission Provider an Interconnection Request in the form of Appendix 1 to these Interconnection Procedures and a refundable deposit of \$10,000. The

Transmission Provider shall apply the deposit toward the cost of an Interconnection Feasibility Study. The Generator shall submit a separate Interconnection Request for each site and may submit multiple Interconnection Requests for a single site.

At Generator's option, Transmission Provider and Generator will identify alternative points of interconnection and configurations at the initial scoping meeting to evaluate in this process and attempt to eliminate alternatives in a reasonable fashion given resources and information available. Generator will select the definitive Point(s) of Interconnection no later than the execution of the Interconnection Feasibility Study Agreement.

3.3 Valid Interconnection Request.

3.3.1 Initiating an Interconnection Request. To initiate an Interconnection Request, Generator must submit all of the following: (i) a \$10,000 deposit, (ii) a completed application in the form of Appendix 1, and (iii) demonstration of Site Control or a posting of an additional deposit of \$10,000. Such deposits shall be applied toward any Interconnection Studies pursuant to the Interconnection Request. If Generator demonstrates Site Control within the cure period specified in Section 3.3.4 after submitting its Interconnection Request, the deposit(s) shall be refundable; otherwise, such deposit(s) become non-refundable. The expected In-Service Date of the new Facility or increase in capacity of the existing Facility shall be no more than the process window for the regional expansion planning period not to exceed seven years from

the date the Interconnection Request is received by the Transmission Provider, unless the Interconnection Customer demonstrates that engineering, permitting and construction of the new Facility or increase in capacity of the Facility will take longer than the regional expansion planning period. In no event shall the In-Service Date exceed ten years from the date the Interconnection Request is received by the Transmission Provider.

3.3.2 Acknowledgement of Interconnection Request. Transmission Provider shall acknowledge receipt of the Interconnection Request within five (5) Business Days of receipt of the request and attach a copy of the received Interconnection Request to the acknowledgement.

3.3.3 Deficiencies in Interconnection Request. An Interconnection Request will not be considered to be a valid request until all of the above items have been received by the Transmission Provider. If an Interconnection Request fails to meet the requirements set forth in this Section, the Transmission Provider shall notify the Generator within five (5) Business Days of receipt of the initial Interconnection Request of the reasons for such failure and that the Interconnection Request does not constitute a valid request. Generator shall provide the Transmission Provider the additional requested information needed to constitute a valid request within ten (10) Business Days after receipt of such notice. Failure by Generator to comply with this Section 3.3.3 shall be treated in accordance with Section 3.6.

3.3.4 Initial Scoping Meeting. Within ten (10) Business Days after receipt of a valid Interconnection Request, Transmission Provider shall establish a date agreeable to Generator for the initial scoping meeting, and such date shall be no later than 30 days from receipt of the Interconnection Request.

Small Gen Position: The scoping meeting may be waived by Generator.

The purpose of the initial scoping meeting shall be to discuss alternative interconnection options, to exchange information including any transmission data that would reasonably be expected to impact such interconnection options, to analyze such information and to determine the potential feasible points of interconnection. Transmission Provider and Generator will bring to the meeting such technical data, including, but not limited to: (i) general facility loadings, (ii) general instability issues, (iii) general short circuit issues, (iv) general voltage issues, and (v) general reliability issues as may be reasonably required to accomplish the purpose of the meeting. Transmission Provider and Generator will also bring to the meeting personnel and other resources as may be reasonably required to accomplish the purpose of the meeting in the time allocated for the meeting. On the basis of the meeting, Generator shall designate its Point of Interconnection, pursuant to Section 6.1, and one or more available alternative points of interconnection. The duration of the meeting shall allocate sufficient time to accomplish its purpose.

Within five (5) Business Days after the scoping meeting is held, Generator may elect not to have an Interconnection Feasibility Study conducted for the Interconnection Request. If Generator so elects, Generator will notify the Transmission Provider in writing within such period. In that event, the Transmission Provider will initiate an Interconnection System Impact Study in accordance with Section 7 of these Interconnection Procedures and apply the \$10,000 deposit towards the Interconnection System Impact Study.

3.4 OASIS Posting. The Transmission Provider will maintain on its OASIS a list of all Interconnection Requests. The list will identify, for each Interconnection Request: (i) the maximum summer and winter megawatt electrical output; (ii) the location by county and state; (iii) the station or transmission line or lines where the interconnection will be made; (iv) the projected In-Service Date; (v) the status of the Interconnection Request, including queue position; (vi) the type of interconnection service being requested; and (vii) the availability of any studies related to the Interconnection Request.

Gen Position: The list will not disclose the identity of the Generator until the Generator executes an Interconnection and Operating Agreement or requests that the Transmission Provider file an unexecuted Interconnection and Operating Agreement with the Commission.

TO Position: The list of Interconnection Requests will disclose the identity of the Generator.

The Transmission Provider shall post to its OASIS site any deviations from the study timelines set forth herein. Interconnection Study reports and Optional Study reports shall be posted to the Transmission Provider's OASIS site subsequent to the meeting between the Generator and the Transmission Provider to discuss the applicable study results.

3.5 Coordination with Affected Systems.

Gen Position: The Transmission Provider will coordinate the conduct of any studies required to determine the impact of the Interconnection Request on Affected Systems with Affected System Operators and include those results in its applicable Interconnection Study within the timeframe specified in these Interconnection Procedures. The Transmission Provider will include such Affected System Operators in all meetings held with the Generator as required by these Interconnection Procedures. The Generator will cooperate with the Transmission Provider in all matters related to the conduct of studies and the determination of modifications to Affected Systems. A transmission provider which may be an Affected System shall cooperate with the Transmission Provider with whom interconnection has been requested in all matters related to the conduct of studies and the determination of modifications to Affected Systems.

TO Position: The Transmission Provider and Generators shall use Reasonable Efforts to coordinate with the Affected Systems to perform the Interconnection Studies. The Transmission Provider shall not be obligated to pay for: (i) any costs related to the

Interconnection Studies performed on the Affected Systems; or
(ii) any costs related to any necessary network upgrades on the Affected Systems identified as a result of the Interconnection Studies. In addition, to the extent that Affected System studies delay or impede studies or other related activities on the Transmission Provider's Transmission System, the Transmission Provider shall not be held in default or, in any case, liable to the Generator.

3.6 Withdrawal. The Generator may withdraw its Interconnection Request at any time by written notice of such withdrawal to the Transmission Provider. In addition, if the Generator fails to adhere to all requirements of these Interconnection Procedures, except as provided in Section 13.6, the Transmission Provider shall deem the Interconnection Request to be withdrawn and shall provide written notice to the Generator of the deemed withdrawal and an explanation of the reasons for such deemed withdrawal. Withdrawal shall result in the loss of the Generator's queue position. A Generator that withdraws or is deemed to have withdrawn its Interconnection Request shall pay to the Transmission Provider all costs that the Transmission Provider prudently incurs with respect to that Interconnection Request prior to the Transmission Provider's receipt of notice described above. The Transmission Provider shall (i) update the OASIS queue posting and (ii) refund to the Generator any portion of the Generator's deposit or study payments that exceeds the costs that the Transmission Provider has incurred, including interest calculated in accordance with Section 35.19a(a)(2) of the Commission's regulations. In

the event of such withdrawal, the Transmission Provider, subject to the confidentiality provisions of Section 13.1, shall provide, at Generator's request, all information that the Transmission Provider developed for the purpose of completing any study up to the date of withdrawal of the Interconnection Request, unless the Transmission Provider has not delivered the final study report to the Generator.

4. Queue Position.

4.1 General. The Transmission Provider shall assign a queue position based upon the date and time of receipt of the valid Interconnection Request; provided that, if the sole reason an Interconnection Request is not valid is the lack of required information on the application form, and the Generator provides such information in accordance with Section 3.3.3, then the Transmission Provider shall assign the Generator a queue position based on the date the application form was originally filed. The queue position of each Interconnection Request will be used to determine the order of performing the Interconnection Studies and determination of cost responsibility for the facilities necessary to accommodate the Interconnection Request.

4.2 Clustering. At Transmission Provider's option, Interconnection Requests may be studied serially or in clusters for the purpose of the Interconnection System Impact Study.

TO Position: for all types of Interconnection Services.

Gen Position: for all types of Interconnection Services, except for energy resource type interconnection service, which will be studied serially.

If Transmission Provider elects to study Interconnection Requests in clusters, all Interconnection Requests received within a period not to exceed

TO Position: 180 days

Gen Position: 90 days

, hereinafter referred to as the “queue cluster window,” shall be studied together, as appropriate. Transmission Provider may study an Interconnection Request separately to the extent warranted by Good Utility Practice based upon the electrical remoteness of the proposed Facility or pursuant to a Generator’s request for an expedited study as set forth in Section 4.2.2.

4.2.1 Non-RTO/ISO Environment. In a non-RTO/ISO environment, Transmission Providers may study Interconnection Requests sequentially to the extent practicable.

4.2.2 [Fast Track. The Interconnection Procedures Drafting Committee did not address this Section.]

4.3 Transferability of Queue Position. A Generator may transfer its queue position to another entity only if such entity acquires the specific facility identified in the Interconnection Request and the Point of Interconnection does not change.

4.4 Modifications. The Generator may submit to the Transmission Provider, in writing, modifications to any information provided in the Interconnection Request. The Generator shall retain its queue position if the modifications are in accordance with Sections 4.4.1, 4.4.2 or 4.4.5, or are determined not to be Material Modifications pursuant to Sections 4.4.3 and 4.4.4.

Notwithstanding the above, during the course of the Interconnection Studies, either the Generator or Transmission Provider may identify changes to the planned interconnection that may improve the costs and benefits (including reliability) of the interconnection, and the ability of the proposed change to accommodate the Interconnection Request. To the extent the identified changes are acceptable to the Transmission Provider and Generator, such acceptance not be unreasonably withheld, Transmission Provider shall modify the Point of Interconnection and/or configuration in accordance with such changes and proceed with any re-studies necessary to do so in accordance with Section 6.4, Section 7.6 and Section 8.6 as applicable and Generator shall retain its queue position.

4.4.1 Prior to the return of the executed Interconnection System Impact Study Agreement to the Transmission Provider, modifications permitted under this Section shall include specifically: (a) a reduction up to 60% (MW) of electrical output of the proposed project; (b) modifying the technical parameters associated with the generator technology or the generator step-up transformer impedance characteristics; (c) modifying the interconnection configuration; and/or (d) any other change except to the Point of Interconnection. For plant increases, the incremental increase in plant output will go to the end of the queue for the purposes of cost allocation and study analysis.

4.4.2 Prior to the return of the executed Interconnection Facility Study Agreement to the Transmission Provider, the modifications

permitted under this Section shall include specifically: (a) additional 15% decrease in plant size (MW), and (b) generator technical parameters associated with modifications to generator technology and transformer impedances; provided, however, the incremental costs associated with those modifications are the responsibility of the requesting Generator.

4.4.3 Prior to making any modification other than those specifically permitted by Sections 4.4.1, 4.4.2, and 4.4.5, Generator may first request that the Transmission Provider evaluate whether such modification is a Material Modification. Material Modifications are those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date. In response to Generator's request, the Transmission Provider shall evaluate the proposed modifications prior to making them and inform the Generator in writing of whether the modifications would constitute a Material Modification. The Generator may then withdraw the proposed modification or proceed with a new Interconnection Request for such modification.

4.4.4 Upon receipt of Generator's request for modification permitted under this Section 4.4, the Transmission Provider shall commence and perform any necessary additional studies as soon as practicable, but in no event shall the Transmission Provider commence such studies later than thirty (30) days after receiving notice of Generator's request. Any additional studies resulting from such modification shall be done at Generator's cost.

4.4.5 Except for fast-track Interconnection Requests, extensions of less than three (3) cumulative years in the Commercial Operation Date of the Facility to which the Interconnection Request relates are not material and should be handled through construction sequencing. No change in Commercial Operation Date is permitted for fast-track projects.

5. Procedures for Interconnection Requests Submitted Prior to Effective Date of Interconnection Procedures.

5.1 Queue Position for Pending Requests.

5.1.1 Any generator assigned a queue position prior to the effective date of these Interconnection Procedures shall retain that queue position.

5.1.1.1 If an Interconnection Study Agreement has not been executed as of the effective date of these Interconnection Procedures, then such Interconnection Study, and any subsequent Interconnection Studies, shall be processed in accordance with these Interconnection Procedures.

5.1.1.2 If an Interconnection Study Agreement has been executed prior to the effective date of these Interconnection Procedures, such Interconnection Study shall be completed in accordance with the terms of such agreement.

5.1.1.3 If an Interconnection and Operating Agreement has been tendered as of the effective date of these

Interconnection Procedures, then the Transmission Provider and Generator shall finalize its terms.

5.1.2 Transition Period. To the extent necessary, the Transmission Provider and Generators with an outstanding request shall transition to these Interconnection Procedures within a reasonable period of time not to exceed 60 days. Any Generator with an outstanding request as of the effective date of these Interconnection Procedures may request a reasonable extension of any deadline, otherwise applicable, if necessary to avoid undue hardship or prejudice to its Interconnection Request. A reasonable extension shall be granted by the Transmission Provider to the extent consistent with the intent and process provided for under these Interconnection Procedures.

5.2 New Transmission Provider. If the Transmission Provider transfers control of its Transmission System to a successor Transmission Provider during the period when an Interconnection Request is pending, the original Transmission Provider shall transfer to the successor Transmission Provider any amount of the deposit or payment that exceeds the cost that it incurred to evaluate the request for interconnection. Any difference between such net amount and the deposit or payment required by these Interconnection Procedures shall be paid by or refunded to the Generator, as appropriate. The original Transmission Provider shall coordinate with the successor Transmission Provider to complete any Interconnection Study, as appropriate, that the original Transmission Provider has begun but has not completed. If the Transmission Provider has tendered a draft

Interconnection and Operating Agreement to the Generator but the Generator has not either executed the Interconnection and Operating Agreement or requested the filing of an unexecuted Interconnection and Operating Agreement with the Commission, unless otherwise provided, the Generator may elect to complete negotiations with the Transmission Provider or the successor Transmission Provider.

6. Interconnection Feasibility Study

6.1 Interconnection Feasibility Study Agreement. Simultaneously with the acknowledgement of a valid Interconnection Request the Transmission Provider shall provide to Generator an Interconnection Feasibility Study Agreement in the form of Appendix 2. The Interconnection Feasibility Study Agreement shall specify that Generator is responsible for the actual cost of the Interconnection Feasibility Study. Within five (5) Business Days following the initial scoping meeting Generator shall specify for inclusion in the attachment to the Interconnection Feasibility Study Agreement the Point(s) of Interconnection and any reasonable alternative points of interconnection. Within five (5) Business Days following the Transmission Provider's receipt of such designation, Transmission Provider shall tender to Generator the Interconnection Feasibility Study Agreement signed by Transmission Provider, which includes a good faith estimate of the cost for completing the Interconnection Feasibility Study.

TO Position: and Generator shall pay the difference between the \$10,000 deposit and the good faith estimate of cost for the study provided by the Transmission Provider.

Gen Position: no additional language.

On or before the return of the executed Interconnection Feasibility Study Agreement to the Transmission Provider, the Generator shall provide the technical data called for in Appendix 2.

If the Feasibility Study uncovers any unexpected result(s) not contemplated during the Initial Scoping Meeting, a substitute Point of Interconnection identified by either Generator or Transmission Provider, and acceptable to the other, such acceptance not to be unreasonably withheld, will be substituted for the designated Interconnection Point specified above without loss of queue position, and re-studies shall be completed pursuant to Section 6.4 as applicable. For the purpose of this Section 6.1, if the Transmission Provider and Generator cannot agree on the substituted Point of Interconnection, then Generator may direct that one of the alternatives as specified in the Interconnection Feasibility Study Agreement, as specified pursuant to Section 3.3.4, shall be the substitute.

6.2 Scope of Interconnection Feasibility Study.² The Interconnection Feasibility Study shall preliminarily evaluate the feasibility of the proposed interconnection to the Transmission System.

² Additional details on the Interconnection Feasibility Study scope are contained in Appendix 2.

The Interconnection Feasibility Study will consider the Base Case as well as all generating facilities (and with respect to (iii), any identified network upgrades) that, on the date the Interconnection Feasibility Study is commenced: (i) are directly interconnected to the Transmission System; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending higher queued Interconnection Request to interconnect to the Transmission System; and (iv) have no queue position but have executed an Interconnection and Operating Agreement or requested that an unexecuted Interconnection and Operating Agreement be filed with the Commission. The Interconnection Feasibility Study will consist of a power flow and short circuit analysis. The Interconnection Feasibility Study will provide a list of facilities and a non-binding good faith estimate of cost responsibility and a non-binding good faith estimated time to construct.

6.3 Interconnection Feasibility Study Procedures. The Transmission Provider shall utilize existing studies to the extent practicable when it performs the study. The Transmission Provider shall use Reasonable Efforts to complete the Interconnection Feasibility Study no later than 45 days after the Transmission Provider receives the fully executed Interconnection Feasibility Study Agreement. At the request of the Generator or at any time the Transmission Provider determines that it will not meet the required time frame for completing the Interconnection Feasibility Study, Transmission Provider shall notify the Generator as to the schedule status of the Interconnection Feasibility Study. If the Transmission Provider is unable to complete the Interconnection

Feasibility Study within that time period, it shall notify the Generator and provide an estimated completion date with an explanation of the reasons why additional time is required. Upon request, the Transmission Provider shall provide the Generator supporting documentation, workpapers and relevant power flow, short circuit and stability databases for the Interconnection Feasibility Study, subject to confidentiality arrangements consistent with Section 13.1.

6.3.1 Meeting with Transmission Provider. Within ten (10) Business Days of providing an Interconnection Feasibility Study report to Generator, Transmission Provider and Generator shall meet to discuss the results of the Interconnection Feasibility Study.

6.4 Re-Study. If re-study of the Feasibility Study is required due to a higher queued project dropping out of the queue, or a modification of a higher queued project subject to Section 4.4, or re-designation of the Point of Interconnection pursuant to Section 6.1 Transmission Provider shall notify Generator in writing. Such re-study shall take not longer than forty-five (45) days from the date of the notice. Any cost of re-study shall be borne by the Generator being re-studied.

7. Interconnection System Impact Study.

7.1 Interconnection System Impact Study Agreement. Unless otherwise provided in Section 3.3.4, simultaneously with the delivery of the Interconnection Feasibility Study to the Generator, the Transmission Provider shall provide to the Generator an Interconnection System Impact Study Agreement in the form of Appendix 3 to these Interconnection Procedures. The Interconnection System Impact Study Agreement shall

provide that the Generator shall compensate the Transmission Provider for the actual cost of the Interconnection System Impact Study. Within three (3) Business Days following the Interconnection Feasibility Study results meeting, the Transmission Provider shall provide to Generator a non-binding good faith estimate of the cost and timeframe for completing the Interconnection System Impact Study.

7.2 Execution of Interconnection System Impact Study Agreement. The Generator shall execute the Interconnection System Impact Study Agreement and deliver the executed Interconnection System Impact Study Agreement to the Transmission Provider no later than thirty (30) days after its receipt along with demonstration of Site Control, and

TO Position: prepayment of the estimated cost of the study or other form of payment based upon mutual agreement between the parties.

Gen Position: a \$50,000 deposit.

If the Generator does not provide all such technical data when it delivers the Interconnection System Impact Study Agreement, the Transmission Provider shall notify the Generator of the deficiency within five (5) Business Days of the receipt of the executed Interconnection System Impact Study Agreement and the Generator shall cure the deficiency within ten (10) Business Days of receipt of the notice, provided, however, such deficiency does not include failure to deliver the executed Interconnection System Impact Study Agreement or deposit.

If the System Impact Study uncovers any unexpected result(s) not contemplated during the Initial Scoping Meeting and the Interconnection

Feasibility Study, a substitute Point of Interconnection identified by either Generator or Transmission Provider, and acceptable to the other, such acceptance not to be unreasonably withheld, will be substituted for the designated Interconnection Point specified above without loss of queue position, and restudies shall be completed pursuant to Section 7.6 as applicable. For the purpose of this Section 7.6, if the Transmission Provider and Generator cannot agree on the substituted Point of Interconnection, then Generator may direct the one of the alternatives as specified in the Interconnection Feasibility Study Agreement, as specified pursuant to Section 3.3.4, shall be the substitute.

7.3 Scope of Interconnection System Impact Study.³ The Interconnection System Impact Study shall evaluate the impact of the proposed interconnection on the reliability of the Transmission System. The Interconnection System Impact Study will consider the Base Case as well as all generating facilities (and with respect to (iii) below, any identified network upgrades associated with such higher queued interconnection) that, on the date the Interconnection System Impact Study is commenced: (i) are directly interconnected to the Transmission System; (ii) are interconnected to Affected Systems and may have an impact on the Interconnection Request; (iii) have a pending higher queued Interconnection Request to interconnect to the Transmission System; and (iv) have no queue position but have executed an Interconnection and Operating Agreement or requested that an unexecuted Interconnection and Operating Agreement be filed with the Commission. The

³ Additional details on the Interconnection System Impact Study scope are contained in Appendix 3.

Interconnection System Impact Study will consist of a short circuit analysis, a stability analysis, and a power flow analysis. The Interconnection System Impact Study will state the assumptions upon which it is based; state the results of the analyses; and provide the requirements or potential impediments to providing the requested interconnection service, including a preliminary indication of the cost and length of time that would be necessary to correct any problems identified in those analyses and implement the interconnection. The Interconnection System Impact Study will provide a list of facilities that are required as a result of the Interconnection Request and a non-binding good faith estimate of cost responsibility and a non-binding good faith estimated time to construct.

7.4 Interconnection System Impact Study Procedures. The Transmission Provider shall use Reasonable Efforts to coordinate the Interconnection System Impact Study with any Affected System that is affected by the Interconnection Request. The Transmission Provider shall utilize existing studies to the extent practicable when it performs the study. The Transmission Provider shall use Reasonable Efforts to complete the Interconnection System Impact Study within

Gen Position: 60

TO Position: 90

days after the receipt of the Interconnection System Impact Study Agreement or notification to proceed, study payment, and technical data. If Transmission Provider uses clustering, the Transmission Provider shall use Reasonable Efforts to deliver a completed Interconnection System

Impact Study within 120 days after the close of the queue cluster window. At the request of the Generator or at any time the Transmission Provider determines that it will not meet the required time frame for completing the Interconnection System Impact Study, Transmission Provider shall notify the Generator as to the schedule status of the Interconnection System Impact Study. If the Transmission Provider is unable to complete the Interconnection System Impact Study within the time period, it shall notify the Generator and provide an estimated completion date with an explanation of the reasons why additional time is required. Upon request, the Transmission Provider shall provide the Generator supporting documentation, workpapers and relevant pre-Interconnection Request and post-Interconnection Request power flow, short circuit and stability databases for the Interconnection System Impact Study, subject to confidentiality arrangements consistent with Section 13.1.

7.5 Meeting with Transmission Provider. Within ten (10) Business Days of providing an Interconnection System Impact Study report to Generator, Transmission Provider and Generator shall meet to discuss the results of the Interconnection System Impact Study.

7.6 Re-Study. If re-study of the Interconnection System Impact Study is required due to a higher queued project dropping out of the queue, a modification of a higher queued project subject to 4.4, or re-designation of the Point of Interconnection pursuant to Section 6.1 Transmission Provider shall notify Generator in writing. Such re-study shall take no longer than sixty (60) days

Gen Position: from the date of notice.

TO Position: from initiation. Initiation will commence as soon as possible and will be governed by queue position.

Any cost of re-study shall be borne by the Generator being re-studied.

8. Interconnection Facilities Study.

8.1 Interconnection Facilities Study Agreement. Simultaneously with the delivery of the Interconnection System Impact Study to the Generator, the Transmission Provider shall provide to the Generator an Interconnection Facilities Study Agreement in the form of Appendix 4 to these Interconnection Procedures. The Interconnection Facilities Study Agreement shall provide that the Generator shall compensate the Transmission Provider for the actual cost of the Interconnection Facilities Study. Within three (3) Business Days following the Interconnection System Impact Study results meeting, the Transmission Provider shall provide to Generator a non-binding good faith estimate of the cost and timeframe for completing the Interconnection Facilities Study. The Generator shall execute the Interconnection Facilities Study Agreement and deliver the executed Interconnection Facilities Study Agreement to the Transmission Provider within thirty (30) days after its receipt, together with the required technical data and the greater of \$100,000 or Generator's portion of the estimated monthly cost of conducting the Interconnection Facilities Study.

8.1.1 Transmission Provider shall invoice Generator on a monthly basis for the work to be conducted on the Interconnection Facilities Study each month. Generator shall pay invoiced amounts within thirty (30) days of receipt of invoice. Transmission Provider shall

continue to hold the amounts on deposit until settlement of the final invoice.

8.2 Scope of Interconnection Facilities Study.⁴ The Interconnection Facilities Study Agreement shall specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Interconnection Request to the Transmission System. The Interconnection Facilities Study shall also identify the electrical switching configuration of the connection equipment, including, without limitation: the transformer, switchgear, meters, and other station equipment; the nature and estimated cost of any Transmission Provider Interconnection Facilities and Network Upgrades necessary to accomplish the interconnection; and an estimate of the time required to complete the construction and installation of such facilities.

8.3 Interconnection Facilities Study Procedures. The Transmission Provider shall use Reasonable Efforts to coordinate the Interconnection Facilities Study with any Affected System. The Transmission Provider shall utilize existing studies to the extent practicable in performing the Interconnection Facilities Study. The Transmission Provider shall use Reasonable Efforts to complete the study and issue a draft Interconnection Facilities Study report to the Generator within the following number of days after receipt of an executed Interconnection Facilities Study Agreement: ninety (90) days, with no more than a +/- 20% cost

⁴ Additional details on the Interconnection Facilities Study scope are contained in Appendix 4.

estimate contained in the report; or 180 days, if the Generator requests a +/- 10% cost estimate. At the request of the Generator or at any time the Transmission Provider determines that it will not meet the required time frame for completing the Interconnection Facilities Study, Transmission Provider shall notify the Generator as to the schedule status of the Interconnection Facilities Study. If the Transmission Provider is unable to complete the Interconnection Facilities Study and issue a draft Interconnection Facilities Study report within the time required, it shall notify the Generator and provide an estimated completion date and an explanation of the reasons why additional time is required. The Generator may, within thirty (30) days after receipt of the draft report, provide written comments to the Transmission Provider, which the Transmission Provider shall include in the final report. The Transmission Provider shall issue the final Interconnection Facilities Study report within fifteen (15) Business Days of receiving the Generator's comments or promptly upon receiving Generator's statement that it will not provide comments. The Transmission Provider may reasonably extend such fifteen-day period upon notice to the Generator if the Generator's comments require the Transmission Provider to perform additional analyses or make other significant modifications prior to the issuance of the final Interconnection Facilities Report. Upon request, the Transmission Provider shall provide the Generator supporting documentation, workpapers, and databases or data developed in the preparation of the Interconnection Facilities Study, subject to confidentiality arrangements consistent with Section 13.1.

8.4 Meeting with Transmission Provider. Within ten (10) Business Days of providing a draft Interconnection Facilities Study report to Generator, Transmission Provider and Generator shall meet to discuss the results of the Interconnection Facilities Study.

8.5 Re-Study. If re-study of the Interconnection Facilities Study is required due to a higher queued project dropping out of the queue or a modification of a higher queued project pursuant to Section 4.4, Transmission Provider shall so notify Generator in writing. Such re-study shall take no longer than sixty (60) days

Gen Position: from the date of notice.

TO Position: from initiation. Initiation will commence as soon as possible and will be governed by queue position.

Any cost of re-study shall be borne by the Generator being re-studied.

9. Interim Agreements.

9.1 Interim Engineering & Procurement (“E&P”) Agreement. Prior to executing an Interconnection and Operating Agreement, a Generator may, in order to advance the implementation of its interconnection, request and Transmission Owner⁵ shall offer the Generator, an agreement that authorizes the Transmission Owner to begin engineering and procurement of long lead-time items necessary for the establishment of the interconnection (“Interim E&P Agreement”). However, the Transmission Owner shall not be obligated to offer an Interim E&P Agreement if Generator is in dispute resolution as a result of an allegation that

⁵ If a Transmission Owner has transferred to another party responsibility for engineering and procurement of major equipment with respect to all interconnections, in connection or related to operational control of the Transmission System, for purposes of this Section 9.1 the term “Transmission Owner” shall be deemed to refer to such party.

Generator has failed to meet any milestones or comply with any prerequisites specified in other parts of the Interconnection Procedures. The Interim E&P Agreement is an optional procedure and it will not alter the Generator's queue position or In-Service Date. The Interim E&P Agreement shall provide for the Generator to pay the cost of all activities authorized by the Generator and to make advance payments or provide other satisfactory security for such costs. The Generator shall pay the cost of such authorized activities and any cancellation costs for equipment that is already ordered for its interconnection, which cannot be mitigated as hereafter described, whether or not such items or equipment later become unnecessary. If Generator withdraws its application for interconnection or either party terminates the Interim E&P Agreement, to the extent the equipment ordered can be canceled under reasonable terms, Generator shall be obligated to pay the associated cancellation costs. To the extent that the equipment cannot be reasonably canceled, Transmission Owner may elect: (i) to take title to the equipment, in which event Transmission Owner shall refund Generator any amounts paid by Generator for such equipment and shall pay the cost of delivery of such equipment, or (ii) to transfer title to and deliver such equipment to Generator, in which event Generator shall pay any unpaid balance and cost of delivery of such equipment.

9.2 Other Interim Agreements Upon Mutual Agreement. The Transmission Provider or the Generator may request and enter into other types of interim agreements prior to executing an Interconnection and Operating

Agreement. These other interim agreements may include but are not limited to design, construction and/or siting activities.

9.3 Minimum Terms and Conditions of Interim Agreements. Interim agreements, including Interim E&P Agreements, should at a minimum, address the following issues in a manner consistent with the Tariff:

Scope

Schedule

Delivery Point for Equipment (if applicable)

Payment

Security

Termination rights and obligations

Mitigation

Liability exposure

Indemnity obligations

Insurance

Force Majeure

10. Optional Study.

10.1 Optional Study Agreement. On or after the date when the Generator receives Interconnection System Impact Study results, the Generator may request, and the Transmission Provider shall perform a reasonable number of Optional Studies. The request shall describe the assumptions that the Generator wishes the Transmission Provider to study within the scope described in Section 10.2. Within five (5) Business Days after receipt of a request for an Optional Study, the Transmission Provider shall provide to the Generator an Optional Study Agreement in the form of

Appendix 5. The Optional Study Agreement shall: (i) specify the technical data that the Generator must provide for each phase of the Optional Study, (ii) specify Generator's assumptions as to which Interconnection Requests with earlier queue priority dates will be excluded from the optional study case and assumptions as to the type of interconnection service for Interconnection Requests remaining in the optional study case, and (iii) the Transmission Provider's estimate of the cost of the Optional Study. To the extent known by the Transmission Provider, such estimate shall include any costs expected to be incurred by any Affected System whose participation is necessary to complete the Optional Study. Notwithstanding the above, the Transmission Provider shall not be required as a result of an Optional Study request to conduct any additional Interconnection Studies with respect to any other Interconnection Request. The Generator shall execute the Optional Study Agreement within ten (10) Business Days of receipt and deliver the Optional Study Agreement, the technical data and the study payment to the Transmission Provider.

10.2 Scope of Optional Study. The Optional Study will consist of a sensitivity analysis based on the assumptions specified by the Generator in the Optional Study Agreement. The Optional Study will also identify the Transmission Provider Interconnection Facilities and the Network Upgrades, and the estimated cost thereof, that may be required to provide transmission service or interconnection service based upon the results of the Optional Study. The Optional Study shall be performed solely for informational purposes. The Transmission Provider shall use Reasonable

Efforts to coordinate the study with any Affected Systems that may be affected by the types of interconnection services that are being studied. The Transmission Provider shall utilize existing studies to the extent practicable in conducting the Optional Study.

10.3 Optional Study Procedures. The executed Optional Study Agreement, the prepayment, and technical and other data called for therein must be provided to the Transmission Provider within ten (10) Business Days of Generator's receipt of the Optional Study Agreement. The Transmission Provider shall use Reasonable Efforts to complete the Optional Study within a mutually agreed upon time period specified within the Optional Study Agreement. If the Transmission Provider is unable to complete the Optional Study within such time period, it shall notify the Generator and provide an estimated completion date and an explanation of the reasons why additional time is required. Any difference between the study payment and the actual cost of the study shall be paid to the Transmission Provider or refunded to the Generator, as appropriate. Upon request, the Transmission Provider shall provide the Generator supporting documentation and workpapers and databases or data developed in the preparation of the Optional Study, subject to confidentiality arrangements consistent with Section 13.1.

11. Interconnection and Operating Agreement.⁶

11.1 Tender. Simultaneously with the issuance of the draft Interconnection Facilities Study report to the Generator, the Transmission Provider shall

⁶ This section does not attempt to resolve which entities other than the Generator will be parties to the Interconnection and Operating Agreement or whether separate operating agreements will be utilized in ISO/RTO environments.

tender to the Generator a draft Interconnection and Operating Agreement together with draft appendices completed to the extent practicable. The draft Interconnection and Operating Agreement shall be in the form of the *pro forma* Interconnection and Operating Agreement included in Appendix 7. Within thirty days after the issuance of the draft Interconnection Facilities Study Report, the Transmission Provider shall tender the completed draft Interconnection and Operating Agreement appendices.

11.2 Negotiation. Notwithstanding Section 11.1, at the request of the Generator the Transmission Provider shall begin negotiations with the Generator concerning the appendices to the Interconnection and Operating Agreement at any time after the Generator executes the Interconnection Facilities Study Agreement. The Transmission Provider and the Generator shall negotiate concerning any disputed provisions of the appendices to the draft Interconnection and Operating Agreement for not more than sixty days after tender of the final Interconnection Facilities Study Report. If the Generator determines that negotiations are at an impasse, it may request termination of the negotiations at any time after tender of the Interconnection and Operating Agreement pursuant to Section 11.1 and request submission of the unexecuted Interconnection and Operating Agreement with the Commission or initiate dispute resolution procedures pursuant to Section 13.6. If the Generator requests termination of the negotiations, but within 60 days thereafter fails to request either the filing of the unexecuted Interconnection and Operating Agreement or initiate dispute resolution, it shall be deemed to have withdrawn its Interconnection Request. The Transmission Provider shall

provide to the Generator a final Interconnection and Operating Agreement within fifteen (15) Business Days after the completion of the negotiation process.

11.3 Execution and Filing. Within fifteen (15) Business Days after receipt of the final Interconnection and Operating Agreement, the Generator shall provide the Transmission Provider reasonable evidence that continued Site Control and one or more of the following milestones in the development of the Facility, at the Generator's election, has been achieved: (i) the execution of a contract for the supply or transportation of fuel to the Facility; (ii) the execution of a contract for the supply of cooling water to the Facility; (iii) execution of a contract for the engineering for, procurement of major equipment for, or construction of, the Facility; (iv) execution of a contract for the sale of electric energy or capacity from the Facility; (v) application for an air, water, or land use permit; or (vi) posting of \$250,000, non-refundable additional security, which shall be applied toward future construction costs.

The Generator shall either: (i) execute two originals of the tendered Interconnection and Operating Agreement and return them to the Transmission Provider; or (ii) request in writing that the Transmission Provider file with the Commission an Interconnection and Operating Agreement in unexecuted form. As soon as practicable, but not later than ten (10) Business Days after receiving either the two executed originals of the tendered Interconnection and Operating Agreement or the request to file an unexecuted Interconnection and Operating Agreement, the Transmission Provider shall file the Interconnection and Operating

Agreement with the Commission, together with its explanation of any matters as to which the Generator and the Transmission Provider disagree and support for the costs that the Transmission Provider proposes to charge to the Generator under the Interconnection and Operating Agreement.

11.4 Commencement of Interconnection Activities. If the Generator executes the final Interconnection and Operating Agreement, the Transmission Owner and the Generator shall perform their respective obligations in accordance with the terms of the Interconnection and Operating Agreement, subject to modification by the Commission. Upon submission of an unexecuted Interconnection and Operating Agreement, both Generator and Transmission Owner shall promptly comply with the unexecuted Interconnection and Operating Agreement, subject to modification by the Commission.

12. Construction of Transmission Provider Interconnection Facilities and Network Upgrades.

12.1 Schedule. The Transmission Provider and the Generator shall negotiate in good faith concerning a schedule for the construction of the Transmission Provider Interconnection Facilities and the Network Upgrades.

12.2 Permits. The Interconnection and Operating Agreement shall specify the allocation of the responsibilities of the Transmission Provider/Owner and the Generator to obtain all permits, licenses and authorizations that are necessary to accomplish the interconnection in compliance with applicable laws and regulations. The Transmission Provider/Owner and the

Generator shall cooperate with each other in good faith in obtaining any such permits, licenses and authorizations. Nothing in this Section 12.2 shall be construed to waive any rights under applicable law.

12.3 Construction Sequencing.

Gen Position: In general, the In-Service Date of generators seeking interconnection to the Transmission System will determine the sequence of construction of Network Upgrades. A Generator with an Interconnection and Operating Agreement, in order to maintain its In-Service Date, may request that the Transmission Provider advance to the extent necessary the completion of Network Upgrades that: (i) were assumed in the Interconnection Studies for such Generator, (ii) are necessary to support such In-Service Date, and (iii) would otherwise not be completed, pursuant to a contractual obligation of an entity other than the Generator that is seeking interconnection to the Transmission System, in time to support such In-Service Date. Upon such request, Transmission Provider will use Reasonable Efforts to advance the construction of such Network Upgrades to accommodate such request; provided that the Generator commits to pay Transmission Provider: (i) any associated expediting costs and (ii) the cost of such Network Upgrades. The Transmission Provider will refund to the Generator the costs in clause (ii) of the prior sentence at such time as it receives payment from the entity with a contractual obligation to construct such Network Upgrades. Until such costs are refunded by the Transmission Provider, the Generator may utilize the

transmission credits, if any, associated with the Network Upgrades the construction of which was advanced; thereafter the balance of such credits may be utilized by the entity that provided the Transmission Provider with the funds for such refund, to the extent of those funds. The Generator shall be entitled to transmission credits, if any, for any expediting costs paid. The inclusion of costs, recovery of costs and credits in this Section 12.3 is subject to the Commission determination of cost responsibility in the cost responsibility and pricing NOPR.

A Generator with an Interconnection and Operating Agreement, in order to maintain its In-Service Date, may request that the Transmission Provider advance to the extent necessary the completion of Network Upgrades that: (i) are necessary to support such In-Service Date and (ii) would otherwise not be completed, pursuant to an expansion plan of the Transmission Provider, in time to support such In-Service Date. Upon such request, Transmission Provider will use Reasonable Efforts to advance the construction of such Network Upgrades to accommodate such request; provided that the Generator commits to pay Transmission Provider any associated expediting costs. The Generator shall be entitled to transmission credits, if any, for any expediting costs paid. The inclusion of costs, recovery of costs and credits in this Section 12.3 is subject to the Commission determination of cost responsibility in the cost responsibility and pricing NOPR.

TO Position: A Transmission Provider on its own initiative or at the request of the Generator, in order to maintain the requested In-Service Date of the Generator, may advance to the extent necessary the completion of Network Upgrades required to support such In-Service Date and would otherwise not be completed. The Transmission Provider will use Reasonable Efforts to advance the construction of such Network Upgrades to accommodate such requested In-Service Date provided that the Generator commits to pay Transmission Provider: (i) any associated expediting costs and (ii) the cost of such Network Upgrades that would otherwise have been paid by another Generator, subject to reimbursement pursuant to the Commission's determination in the cost responsibility and pricing NOPR. An Interconnection System Impact Study will be amended to determine the facilities necessary to support the requested In-Service Date. This amended study will include those transmission and generator facilities that are expected to be in service on or before the requested In-Service Date.

13. Miscellaneous.

13.1 Confidentiality. Transmission Provider, Transmission Owner(s), and such entities' officers, employees, and contractors shall keep confidential all information provided by Generator related to interconnection service required by Transmission Provider to process an Interconnection Request for network or similar type interconnection service as specified by the Commission (other than the information contained in the Interconnection

Request in Appendix 1) or that otherwise constitutes trade secrets or commercial or financial information, the disclosure of which would harm or prejudice the Generator or Generator's business

TO Position: , all of which shall be clearly identified as confidential in writing by Generator

Gen Position: no additional language necessary

("Confidential Information"). Such Confidential Information shall exclude information to the extent that such information is or becomes generally available to the public without the violation of any obligation of secrecy relating to the information disclosed, including the posted Interconnection Studies on OASIS pursuant to the terms of Section 3.4. Transmission Provider shall use such information solely for the purpose of the Interconnection Study for which it was provided and no other purpose. Confidential Information should only be shared among individuals within the Transmission Provider; Transmission Owner; and any third party who need it to perform Interconnection Studies, to review Interconnection Study results, or to negotiate an Interconnection and Operating Agreement; provided that, under no circumstances shall data be shared with individuals

TO Position: in contravention of Order 889

Gen Position: that have responsibilities within the Transmission Providers/Owners and/or its affiliates' merchant generation and/or marketing functions and otherwise required pursuant to Order 889.

Further, Transmission Provider shall be liable to Generator for any breach of confidentiality caused by its agents or third party contractors.

The Transmission Provider shall, at Generator's election, destroy, in a confidential manner, or return the Confidential Information provided at the time the Confidential Information is no longer needed.

Other than any required disclosures of Interconnection Studies on OASIS, should Transmission Provider be required to disclose the Generator's confidential information with any regulatory body, Transmission Provider shall request confidential treatment of such information from such regulatory body. If Transmission Provider receives any request to disclose confidential information, Transmission Provider shall provide Generator with prompt written notice of any such request so that the Generator may contest disclosure.

Notwithstanding anything to the contrary herein, these provisions shall not require the Transmission Provider or the Generator to disclose information in violation of any confidentiality obligations to third parties.

13.2 Delegation of Responsibility. The Transmission Provider may use the services of subcontractors as it deems appropriate to perform its obligations under these Interconnection Procedures. Transmission Provider shall remain primarily liable to the Generator for the performance of such subcontractors and compliance with its obligations of these Interconnection Procedures. The subcontractor shall keep all information provided confidential and shall use such information solely for the performance of such obligation for which it was provided and no other purpose.

13.3 Obligation for Study Costs. Transmission Provider shall charge and Generator shall pay the actual costs of the Interconnection Studies. Any difference between the study deposit and the actual cost of the applicable Interconnection Study shall be paid by or refunded, except as otherwise provided herein, to Generator or offset against the cost of any future Interconnection Studies associated with the applicable Interconnection Request prior to beginning of any such future Interconnection Studies. Generator shall pay any such undisputed costs within thirty (30) days of receipt of an invoice therefor. The Transmission Provider shall not be obligated to perform or continue to perform any studies unless Generator has paid all undisputed amounts in compliance herewith.

13.4 Third Parties Conducting Studies. If (i) at the time of the signing of an Interconnection Study Agreement there is disagreement as to the estimated time to complete an Interconnection Study, (ii) the Generator receives notice pursuant to Sections 6.3, 7.4 or 8.3 that the Transmission Provider will not complete an Interconnection Study within the applicable timeframe for such Interconnection Study, or (iii) Generator receives neither the Interconnection Study nor a notice under Sections 6.3, 7.4 or 8.3 within the applicable timeframe for such Interconnection Study, then the Generator may require the Transmission Provider to

Gen Position: , within 30 days of notifying Transmission Provider,

TO Position: [No time frame was discussed during the drafting meetings in the context of this section.]

utilize a third party reasonably acceptable to Generator and Transmission Provider to perform such Interconnection Study under the direction of the

Transmission Provider. Transmission Provider shall convey all workpapers, databases, study results and all other supporting documentation prepared to date with respect to the Interconnection Request as soon as practicable upon Generator's request subject to the confidentiality provision in Section 13.1. In any case, such third party contract may be entered into with either the Generator or the Transmission Provider at the Transmission Provider's discretion. In the case of (i), (ii) and (iii) such Interconnection Study will be at the Generator's expense and in the case of (iii) the Generator maintains its right to submit a claim to dispute resolution to recover the costs of such third party study. Such subcontractors shall be required to comply with these Interconnection Procedures and shall use the information provided to it solely for purposes of performing such services and for no other purposes. The Transmission Provider shall cooperate with such subcontractor and Generator to complete and issue the Interconnection Study in the shortest reasonable time.

13.5 Performance Liquidated Damages.

Gen Position: In the event the Transmission Provider fails to meet any of its obligations under these Interconnection Procedures, and fails to remedy any failure within fifteen (15) Business Days, the Transmission Provider shall pay the Generator liquidated damages. Any liquidated damages paid by the Transmission Provider to the Generator shall be an amount equal to 1% of the actual cost of the applicable study cost (including any third party study costs), per day. However, in no event shall the total liquidated damages

exceed 50% of the actual cost of the applicable study(ies). In addition to these liquidated damages, Transmission Provider shall refund any deposit amount for the applicable study previously paid by Generator in excess of actual reasonably incurred study costs immediately upon expiration of the remedy period noted above.

TO Position: TOs believe that this Section 13.5 is unnecessary.

13.6 Disputes. The Generator and Transmission Provider may utilize the dispute resolution procedures of the Tariff if there is a reasonable expectation to resolve the dispute within thirty (30) days, otherwise the Generator and/or Transmission Provider may seek immediate resolution through the Commission, including the Commission's alternative dispute resolution processes. During the pendency of a dispute, neither the Transmission Provider nor the Generator shall be required to continue to comply with the disputed milestones or requirements, or any milestones or requirements for which the disputed milestones or requirements are necessary conditions, of these Interconnection Procedures. The Generator and Transmission Provider shall have a reasonable time after a dispute is resolved in order to come into compliance with such disputed milestones or requirements. The queue position associated with the Interconnection Request shall be maintained during the pendency of a dispute.

TO Position: Commission alternative dispute resolution will be non-binding and appealable to the Commission.

Small Gen Position: The Commission alternative dispute resolution will be binding in disputes relating to Small Generators, at the Small Generator's option.

14. Small Generator Interconnection Requests.

14.1 Applicability.

TO Position: This Section establishes the modified Interconnection Procedures that apply to the Small Generator that is interconnecting generation capacity additions of 5 MW or less for a single unit with an aggregate totaling 20 MW or less for multiple units at a single point of interconnection to the Transmission System. Best practices may require recognition of state and regional differences. If the Small Generator is connecting to facilities classified as distribution, nothing herein shall preempt state and local legal requirements and/or applicable reliability and safety criteria of the distribution company necessary for the interconnection to the local distribution system.

Small Gen Position: Small Generators are defined as units 20 MW and below or aggregations of interconnecting generators at a single Point of Interconnection totaling 20 MW and below, including those owned by Transmission Providers or their affiliates, or increases of less than 20 MW to the capability of existing generation resources. Small Generators may be interconnected through expedited procedures or as may be provided in the Interconnection and Operating Agreement.

14.2 Modified Interconnection Procedure.

TO Position: With the exception of the Interconnection Study deposit, all requirements related to the interconnection for a larger resource must be satisfied by a Small Generator for a capacity addition interconnection of small generating Facilities, as defined in Section 14.1.

Small Gen Position: Requirements related to the application and interconnection for a larger resource are followed except as modified in this Section 14.

14.2.1 Interconnection Study Deposits. Each deposit requirement for an Interconnection Study is waived.

14.2.2 Interconnection Study Costs. While the deposit requirement for the Small Generator is waived, the Small Generator is responsible for all costs associated with the processing of the Interconnection Request and the performance of Interconnection Studies

Small Gen Position: , unless waived.

TO Position: No additional language.

The Small Generator will be billed for such costs following the completion of the Interconnection Studies performed.

14.2.3 Expedited Procedures.

TO Position: Expedited analysis procedures will be utilized, where appropriate, according to good utility practice and subject to applicable state and local requirements and applicable safety and reliability requirements of the local

distribution system, when conducting further Interconnection Studies in connection with the Interconnection Request.

Small Gen Position: Expedited analysis procedures will be utilized.

14.3 Coordination with Local Facilities.

TO Position: A Small Generator that is proposing to interconnect a Facility to the distribution system of a local distribution utility interconnected with the Transmission System shall apply to such local distribution utility for interconnection. Such interconnections may be subject to Planning and Operating Protocols of the RTO/ISO and applicable agreements between the Transmission Provider and the local distribution utility.

Small Gen Position: No corresponding section.

14.4 Queue.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

Small Gen Position: Except for Small Packaged/Micro generators (which have a separate queue), the Small Generators will enter the appropriate queue for larger resources. They may be accelerated through the queue to an Interconnection and Operating Agreement if certain studies are waived or expedited pursuant to Appendix 6.

14.5 Interconnection Studies for Permanent Network and Energy Resource Additions.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

State Commission Position: The National Association of Regulatory Utility Commissioners and the State Commission Representative working on this draft do not agree with a provision in this draft for national pre-certification and technical standards that have not been established nor for interconnection to distribution facilities that we regulate. Such provision is beyond the scope and intent of the Commission's process for standardized generation interconnection procedures for Transmission Providers.

Small Gen Position: These are network or energy resource product Interconnection Requests for permanent Facilities less than 20 MW.

14.5.1 Feasibility Study.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

Small Gen Position: Generally, small generation additions will have very limited and isolated impacts on system facilities. Feasibility Study analyses can be expedited by examining limited contingencies pursuant to Appendix 6.

If during an expedited Feasibility Study, criteria violations are observed, further AC testing may be required.

Once the Feasibility Study is completed, a Feasibility Study report will be transmitted to the Interconnection Customer along with an Impact Study Agreement unless the Impact Study is waived.

In cases where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the Impact Study may be waived and the project will proceed directly to the Facilities Study.

14.5.2 Impact Study / Deposit.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

Small Gen Position: Unless waived pursuant to 14.4.1, as with the Feasibility Study, expedited analysis procedures will be utilized in the course of the Impact Study.

In most cases, the addition of small generation resources will improve local deliverability margins and will have no impact on generator deliverability in an area. If violations are observed, more detailed testing using AC tools is required. Once the Impact Study is completed, the Customer must return the executed Facilities Study Agreement, along with a

deposit in the amount of the estimated cost of the Facilities Study, unless waived.

If the Impact Study so warrants, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection and Operating Agreement.

14.5.3 Facilities Study.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

Small Gen Position: As with larger generation projects, the need to study facilities design for any required attachment facilities and/or Network Upgrades will be performed through the execution of a Facilities Study Agreement between the Interconnection Customer and the Transmission Provider. Facilities design for small capacity additions will be expedited. In most cases, few or no Network Upgrades will be required for Small Generator additions. Attachment facilities, for some Small Generators, may, in part, be elements of a “turn key” or “packaged” installation. In such instances, the design of “turn key” or “packaged” attachments will be reviewed by the Transmission Provider on an expedited basis.

14.5.4 Interconnection and Operating Agreement.

TO Position: TOs have no corresponding section because this matter is best addressed by state and local utility regulators and distribution utilities as provided in Section 14.1 proposed by the TOs.

Small Gen Position: As with larger generation projects, an Interconnection Agreement must be executed and filed with the Commission. A modified version of the standard Interconnection and Operating Agreement may be executed.

14.6 Interconnection Studies for Small Packaged and Micro Generators.

TO Position: TOs do not agree with a provision for technologies that have not been proven, for standards that have not been established, and for distribution facilities that are not regulated by the Commission.

Small Gen Position: Small Packaged Generators are those new generation resources of less than 2 MW, but greater than 250 kW, and pre-certified for interconnected operation. Micro Generators are those new generation resources less than 250 kW and pre-certified for interconnected operation.

Small Packaged and Micro Generators meeting certain pre-defined requirements can be approved for interconnection with a very limited review. Because these generators are pre-certified for interconnected operation and represent a small portion of the system to which they are interconnecting, their interconnections can be considered sufficiently simple that they have little chance of

having an impact on the system or being a hazard to the system, personnel, or other customers. These generators should not require any additional Interconnection Studies.

The pre-certification of these resources means all safety and protection equipment needed for interconnected operation is provided with the pre-certified generator.

The inherent assumptions justifying the greater degree of expedition in these procedures are that such resources will only be connected in situations where no transmission upgrades are required.

14.6.1 Application. A simplified short form application shall be used. (see Small Generator Interconnection Study Application Short Form).

14.6.2 Feasibility/Impact/Facilities Study. For Small Packaged and Micro Generators, the Interconnection Studies are collapsed into a single study (see Appendix 6).

For pre-certified Small Packaged and Micro Generators that do not exceed fifteen percent (15%) of the most recent peak load on the circuit at the point of interconnection or any capacity or load limiting device upstream, the Interconnection Study shall be limited to this fifteen percent (15%) determination (see Appendix 6).

If it is determined during the Interconnection Study that the generator requesting interconnection exceeds this fifteen percent (15%) limitation, then additional studies as described in Appendix 6 Small Generator shall be conducted. Transmission Providers may require Micro Generators to be pre-certified in all circumstances.

Provided the Small Packaged or Micro Generator is pre-certified and does not exceed the fifteen percent (15%) limit, the project will proceed directly to the execution of an Interconnection and Operating Agreement.

14.6.3 Costs. Cost for the limited Feasibility Studies are waived if the Small Generator meets the pre-certification and threshold requirements of Section 14.5.2.

14.6.4 Interconnection Service Agreement. A simplified Interconnection and Operating Agreement will be executed and filed with the Commission, identifying the obligations and rights related to the interconnection of Small Packaged and Micro Generators. For Micro Generators the Interconnection and Operating Agreement shall be not longer than a one page agreement.

14.6.5 Other Requirements. Control center facilities and modeling requirements are waived. However, Small Packaged Generator Facilities must have hourly integrated energy meters to facilitate payment for sales. Micro Generators may utilize hourly integrated energy meters or other generation measuring methodologies if approved by the Transmission Provider, RTO/ISO or Commission. A separate queue for Small Packaged Generators and Micro Generators will be maintained in order to facilitate processing of Interconnection Requests.

APPENDICES

APPENDIX 1	INTERCONNECTION REQUEST
APPENDIX 2	INTERCONNECTION FEASIBILITY STUDY AGREEMENT
APPENDIX 3	INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT
APPENDIX 4	INTERCONNECTION FACILITIES STUDY AGREEMENT
APPENDIX 5	OPTIONAL STUDY AGREEMENT
APPENDIX 6	SMALL GENERATOR EXPEDITED INTERCONNECTION STUDIES
APPENDIX 7	INTERCONNECTION AND OPERATING AGREEMENT

APPENDIX 1

INTERCONNECTION REQUEST

1. The undersigned Generator submits this request to its Facility with the Transmission Provider's Transmission System pursuant to a Tariff.
2. This Interconnection Request is for (check one):

_____ A proposed new Facility.

_____ An increase in the generating capacity or a Material Modification of an existing Facility.
3. Is the Generator requesting expedited procedures pursuant to Section 14 of the Interconnection Procedures?

_____ Yes

_____ No
4. The type of interconnection service requested (check one or both as appropriate):

_____ [It is intended that the types of interconnection services specified in Section 2.4 of the Interconnection Procedures be placed here.]
5. The Generator provides the following information:
 - a. Address or location of the proposed new Facility site (to the extent known) or, in the case of an existing Facility, the name and specific location of the Facility;
 - b. Maximum summer at _____ degrees C and winter at _____ degrees C megawatt electrical output of the proposed new Facility or the amount of megawatt increase in the generating capacity of an existing Facility;
 - c. General description of the equipment configuration;
 - d. Commercial Operation Date by day, month, and year;
 - e. Name, address, telephone number, and e-mail address of the Generator's contact person;

INTERCONNECTION REQUEST

Page 2

- f. Approximate location of the proposed Point of Interconnection (optional);
and
 - g. Generator Data (set forth in Attachment A)
- 6. Applicable deposit amount as specified in the Interconnection Procedures.
- 7. Evidence of Site Control as specified in the Interconnection Procedures (check one)
 - ☐ Is attached to this Interconnection Request
 - ☐ Will be provided at a later date in accordance with these Interconnection Procedures
- 8. This Interconnection Request shall be submitted to the representative indicated below:

[To be completed by Transmission Provider]
- 9. Representative of the Generator to contact:

[To be completed by Generator]
- 10. This Interconnection Request is submitted by:

Name of Generator: _____

By (signature) _____
Name (type or print): _____
Title: _____
Date: _____

Attachment A

GENERATOR DATA

UNIT RATINGS

kVA _____ ?F _____ Voltage _____
 Power Factor _____
 Speed (RPM) _____ Connection (e.g. Wye) _____
 Short Circuit Ratio _____ Frequency, Hertz _____
 Stator Amperes at Rated kVA _____ Field Volts _____
 Max Turbine MW _____ ?F _____

COMBINED TURBINE-GENERATOR-EXCITER INERTIA DATA

Inertia Constant, H = _____ kW sec/kVA
 Moment-of-Inertia, WR^2 = _____ lb. ft.²

REACTANCE DATA (PER UNIT-RATED KVA)**DIRECT AXIS****QUADRATURE AXIS**

Synchronous – saturated	X _{dv} _____	X _{qv} _____
Synchronous – unsaturated	X _{di} _____	X _{qi} _____
Transient – saturated	X' _{dv} _____	X' _{qv} _____
Transient – unsaturated	X' _{di} _____	X' _{qi} _____
Subtransient – saturated	X'' _{dv} _____	X'' _{qv} _____
Subtransient – unsaturated	X'' _{di} _____	X'' _{qi} _____
Negative Sequence – saturated	X _{2v} _____	
Negative Sequence – unsaturated	X _{2i} _____	
Zero Sequence – saturated	X _{0v} _____	
Zero Sequence – unsaturated	X _{0i} _____	
Leakage Reactance	X _{lm} _____	

FIELD TIME CONSTANT DATA (SEC)

Open Circuit	T' _{do} _____	T' _{qo} _____
Three-Phase Short Circuit Transient	T' _{d3} _____	T' _q _____
Line to Line Short Circuit Transient	T' _{d2} _____	
Line to Neutral Short Circuit Transient	T' _{d1} _____	
Short Circuit Subtransient	T'' _d _____	T'' _q _____
Open Circuit Subtransient	T'' _{do} _____	T'' _{qo} _____

ARMATURE TIME CONSTANT DATA (SEC)

Three Phase Short Circuit Ta3 _____

Line to Line Short Circuit
Line to Neutral Short Circuit

Ta2 _____
Ta1 _____

MW CAPABILITY AND PLANT CONFIGURATION

GENERATOR DATA

ARMATURE WINDING RESISTANCE DATA (PER UNIT)

Positive R1 _____
Negative R2 _____
Zero R0 _____

Rotor Short Time Thermal Capacity I^2t = _____
Field Current at Rated kVA, Armature Voltage and PF = _____ amps
Field Current at Rated kVA and Armature Voltage, 0 PF = _____ amps
Three Phase Armature Winding Capacitance = _____ microfarad
Field Winding Resistance = _____ ohms _____ °C
Armature Winding Resistance (Per Phase) = _____ ohms _____ °C

CURVES

Saturation, Vee, Reactive Capability, Capacity Temperature Correction
Designate normal and emergency Hydrogen Pressure operating range for multiple curves

GENERATOR STEP-UP TRANSFORMER DATA

RATINGS

Capacity _____ Self-cooled/maximum nameplate
_____ / _____ kVA

Voltage Ratio _____ Generator side/System side
_____ / _____ kV

Winding Connections _____ Low V/High V (Delta or Wye)
_____ / _____

Fixed Taps Available _____

Present Tap Setting _____

IMPEDANCE

Positive _____ Z1 (on self-cooled kVA rating) _____ % _____ X/R

Zero _____ Z0 (on self-cooled kVA rating) _____ % _____ X/R

EXCITATION SYSTEM DATA

Identify appropriate IEEE model block diagram of excitation system and power system stabilizer (PSS) for computer representation in power system stability simulations and the corresponding excitation system and PSS constants for use in the model.

GOVERNOR SYSTEM DATA

Identify appropriate IEEE model block diagram of governor system for computer representation in power system stability simulations and the corresponding governor system constants for use in the model.

APPENDIX 2

INTERCONNECTION FEASIBILITY STUDY AGREEMENT

THIS AGREEMENT is made and entered into this ____ day of _____, 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Generator,") and _____ a _____ existing under the laws of the State of _____, ("Transmission Provider "). Generator and Transmission Provider each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, Generator is proposing to develop a Facility or generating capacity addition to an existing Facility consistent with the Interconnection Request submitted by the Generator dated _____; and

WHEREAS, Generator desires to interconnect the Facility with the Transmission System; and

WHEREAS, Generator has requested the Transmission Provider to perform an Interconnection Feasibility Study to assess the feasibility of interconnecting the proposed Facility to the Transmission System,

Gen Position: and of any Affected Systems;

TO Position: and to coordinate with Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this agreement, with initial capitalization, the terms specified shall have the meanings indicated. Terms used in this agreement with initial capitalization but not defined in this Section 1 shall have the meanings specified in the Tariff.
- 2.0 Generator elects and Transmission Provider shall cause to be performed an Interconnection Feasibility Study consistent with Section 6.0 of these Interconnection Procedures in accordance with the Tariff.
- 3.0 The scope of the Interconnection Feasibility Study shall be subject to the assumptions set forth in Attachment A to this Agreement.
- 4.0 The Interconnection Feasibility Study shall be based on the technical information provided by Generator in the Interconnection Request, as may be modified as the result of the Initial Scoping Meeting. Transmission Provider reserves the right to request additional technical information from Generator as may reasonably become necessary consistent with Good

Utility Practice during the course of the Interconnection Feasibility Study and as designated in accordance with Section 3.3.4 of the Interconnection Procedures. If, after the designation of the Point of Interconnection pursuant to Section 3.3.4 of the Interconnection Procedures, Generator modifies its Interconnection Request, the time to complete the Interconnection Feasibility Study may be extended.

- 5.0 The Interconnection Feasibility Study report shall provide the following information:
- preliminary identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;
 - preliminary identification of any thermal overload or voltage limit violations resulting from the interconnection; and
 - preliminary description and non-bonding estimated cost of facilities required to interconnect the Facility to the Transmission System and to address the identified short circuit and power flow issues.
- 6.0 The Transmission Provider's good faith estimated cost for performance of the Interconnection Feasibility Study is \$_____.

TO Position: The Generator shall pay the Transmission Provider the amount by which the estimated cost exceeds the deposit the Generator submitted with the Interconnection Request when the Generator executes this Agreement.

Gen Position: Upon receipt of the Interconnection Feasibility Study the Transmission Provider shall charge and Generator shall pay the actual costs of the Interconnection Feasibility Study.

Any difference between the deposit and the actual cost of the study shall be paid by or refunded to the Generator, as appropriate.

- 7.0 Miscellaneous. [The Interconnection Feasibility Study Agreement shall include standard miscellaneous terms including, but not limited to, indemnities, representations, disclaimers, warranties, governing law, amendment, execution, waiver, enforceability and assignment, that reflect best practices in the electric industry, and that are consistent with regional differences, applicable laws, and the organizational nature of each Party. All of these provisions, to the extent practicable, shall be consistent with the provisions of the Interconnection Procedures and the Interconnection and Operating Agreement.]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of Transmission Provider]

[Insert name of Generator]

By _____
Name (typed or printed):
Title

By _____
Name (typed or printed):
Title

**Attachment A to
Interconnection Feasibility
Study Agreement**

ASSUMPTIONS USED IN CONDUCTING THE FEASIBILITY STUDY

The Interconnection Feasibility Study will be based upon the information set forth in the Interconnection Request and agreed upon in the Initial Scoping Meeting held on _____:

1. Designation of Point of Interconnection and configuration to be studied.
2. Designation of alternative point(s) of interconnection and configuration

[Above assumptions to be completed by Generator and other assumptions to be provided by Generator and Transmission Provider]

APPENDIX 3

INTERCONNECTION SYSTEM IMPACT STUDY AGREEMENT

THIS AGREEMENT is made and entered into this ____ day of _____, 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Generator,") and _____ a _____ existing under the laws of the State of _____, ("Transmission Provider "). Generator and Transmission Provider each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, Generator is proposing to develop a Facility or generating capacity addition to an existing Facility consistent with the Interconnection Request submitted by the Generator dated _____; and

WHEREAS, Generator desires to interconnect the Facility with the Transmission System;

WHEREAS, the Transmission Provider has completed a Feasibility Study (the "Feasibility Study") and provided the results of said study to the Generator;⁷ and

WHEREAS, Generator has requested the Transmission Provider to perform an Interconnection System Impact Study to assess the impact of interconnecting the Facility to the Transmission System,

Gen Position: and of any Affected Systems;

TO Position: to coordinate with Affected Systems;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this agreement, with initial capitalization, the terms specified shall have the meanings indicated. Terms used in this agreement with initial capitalization but not defined in this Section 1 shall have the meanings specified in the Tariff.
- 2.0 Generator elects and Transmission Provider shall cause to be performed an Interconnection System Impact Study consistent with Section 7.0 of these Interconnection Procedures in accordance with the Tariff.
- 3.0 The scope of the Interconnection System Impact Study shall be subject to the assumptions set forth in Attachment A to this Agreement.

⁷ This recital to be omitted if Generator has elected to forego the Feasibility Study.

- 4.0 The Interconnection System Impact Study will be based upon the results of the Feasibility Study and the technical information provided by Generator in the Interconnection Request, subject to any modifications in accordance with Section 4.4 of the Interconnection Procedures. Transmission Provider reserves the right to request additional technical information from Generator as may reasonably become necessary consistent with Good Utility Practice during the course of the Interconnection System Impact Study. If Generator modifies its designated Point of Interconnection, Interconnection Request, or the technical information provided therein is modified, the time to complete the Interconnection System Impact Study may be extended.
- 5.0 The Interconnection System Impact Study report shall provide the following information:
- identification of any circuit breaker short circuit capability limits exceeded as a result of the interconnection;
 - identification of any thermal overload or voltage limit violations resulting from the interconnection;
 - identification of any instability or inadequately damped response to system disturbances resulting from the interconnection and
 - description and non-binding, good faith estimated cost of facilities required to interconnect the Facility to the Transmission System and to address the identified short circuit, instability, and power flow issues.
- 6.0 The Transmission Provider's good faith estimated cost for performance of the Interconnection System Impact Study is \$_____. The Transmission Provider's good faith estimate for the time of completion of the Interconnection System Impact Study is [insert date].

TO Position: The Generator shall pay the Transmission Provider the amount by which the estimated cost exceeds the deposit the Generator submitted with its Interconnection Request when it executes this Agreement.

Gen Position: Upon receipt of the Interconnection System Impact Study, Transmission Provider shall charge and Generator shall pay the actual costs of the Interconnection System Impact Study .

Any difference between the deposit and the actual cost of the study shall be paid by or refunded to the Generator, as appropriate.

- 7.0 Miscellaneous. [The Interconnection System Impact Study Agreement

shall include standard miscellaneous terms including, but not limited to, indemnities, representations, disclaimers, warranties, governing law, amendment, execution, waiver, enforceability and assignment, that reflect best practices in the electric industry, that are consistent with regional differences, applicable laws and the organizational nature of each Party. All of these provisions, to the extent practicable, shall be consistent with the provisions of the Interconnection Procedures and the Interconnection and Operating Agreement.]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of Transmission Provider]

[Insert name of Generator]

By _____
Name (typed or printed):
Title

By _____
Name (typed or printed):
Title

**Attachment A to
Interconnection System Impact
Study Agreement**

ASSUMPTIONS USED IN CONDUCTING THE SYSTEM IMPACT STUDY

The Interconnection System Impact Study will be based upon the results of the Feasibility Study, subject to any modifications in accordance with Section 4.4 of the Interconnection Procedures, and the following assumptions:

1. Designation of Point of Interconnection and configuration to be studied.
2. Designation of alternative point(s) of interconnection and configuration.

[Above assumptions to be completed by Generator and other assumptions to be provided by Generator and Transmission Provider]

APPENDIX 4

INTERCONNECTION FACILITIES STUDY AGREEMENT

THIS AGREEMENT is made and entered into this ____ day of _____, 20____ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Generator,") and _____ a _____ existing under the laws of the State of _____, ("Transmission Provider "). Generator and Transmission Provider each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, Generator is proposing to develop a Facility or generating capacity addition to an existing Facility consistent with the Interconnection Request submitted by the Generator dated _____; and

WHEREAS, Generator desires to interconnect the Facility with the Transmission System;

WHEREAS, the Transmission Provider has completed a System Impact Study (the "System Impact Study") and provided the results of said study to the Generator; and

WHEREAS, Generator has requested the Transmission Provider to perform an Interconnection Facilities Study to specify and estimate the cost of the equipment, engineering, procurement and construction work needed to implement the conclusions of the Interconnection System Impact Study in accordance with Good Utility Practice to physically and electrically connect the Facility to the Transmission System.

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agreed as follows:

- 1.0 When used in this agreement, with initial capitalization, the terms specified shall have the meanings indicated. Terms used in this agreement with initial capitalization but not defined in this Section 1 shall have the meanings specified in the Tariff.
- 2.0 Generator elects and Transmission Provider shall cause an Interconnection Facilities Study consistent with Section 8.0 of these Interconnection Procedures to be performed in accordance with the Tariff.
- 3.0 The scope of the Interconnection Facilities Study shall be subject to the assumptions set forth in Attachment A and the data provided in Attachment B to this Agreement.
- 4.0 The Interconnection Facilities Study report (i) shall provide a description, estimated cost of (consistent with Attachment A), schedule for required facilities to interconnect the Facility to the Transmission System and

(ii) shall address the short circuit, instability, and power flow issues identified in the System Impact Study.

- 5.0 The Transmission Provider's good faith estimated cost for performance of the Interconnection Facilities Study is \$_____. The time for completion of the Interconnection Facilities Study is specified in Attachment A.

Transmission Provider shall invoice Generator on a monthly basis for the work to be conducted on the Interconnection Facilities Study each month. Generator shall pay invoiced amounts within thirty (30) days of receipt of invoice. Transmission Provider shall continue to hold the amounts on deposit until settlement of the final invoice.

- 6.0 Miscellaneous. [The Interconnection Facility Study Agreement shall include standard miscellaneous terms including, but not limited to, indemnities, representations, disclaimers, warranties, governing law, amendment, execution, waiver, enforceability and assignment, that reflect best practices in the electric industry, and that are consistent with regional differences, applicable laws, and the organizational nature of each Party. All of these provisions, to the extent practicable, shall be consistent with the provisions of the Interconnection Procedures and the Interconnection and Operating Agreement.]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Insert name of Transmission Provider]

[Insert name of Generator]

By _____
Name (typed or printed):
Title Title

By _____
Name (typed or printed):

**Attachment A to
Interconnection Facilities
Study Agreement**

GENERATOR SCHEDULE ELECTION FOR CONDUCTING THE FACILITIES STUDY

The Transmission Provider shall use Reasonable Efforts to complete the study and issue a draft Interconnection Facilities Study report to the Generator within the following number of days after of receipt of an executed copy of this Interconnection Facilities Study Agreement:

? 90 days with no more than a +/- 20% cost estimate contained in the report, or

? 180 days with no more than a +/- 10% cost estimate contained in the report.

[Above to be completed by Generator and other assumptions to be provided by Generator and Transmission Provider]

**Attachment B to
Interconnection Facilities
Study Agreement**

**DATA FORM TO BE PROVIDED BY GENERATOR WITH THE FACILITIES STUDY
AGREEMENT**

Provide location plan and simplified one-line diagram of the plant and station facilities.
For staged projects, please indicate future generation, transmission circuits, etc.

One set of metering is required for each generation connection to the new ring bus or
existing Transmission Provider station. Number of generation connections:

On the one line indicate the generation capacity attached at each metering location.

(Maximum load on CT/PT)

On the one line indicate the location of auxiliary power. (Minimum load on CT/PT)

_____ Amps

Will an alternate source of auxiliary power be available during CT/PT maintenance?

☐ ☐ Yes ☐ ☐ No ☐

Will a transfer bus on the generation side of the metering require that each meter set be
designed for the total plant generation? ☐ ☐ Yes ☐

☐ No (Please indicate on one line).

What type of control system or PLC will be located at the Generator's Facility?

What protocol does the control system or PLC use?

Please provide a 7.5-minute quadrangle of the site. Sketch the plant, station,
transmission line, and property line.

Physical dimensions of the proposed interconnection station:

Date:

APPENDIX 5 OPTIONAL STUDY AGREEMENT

THIS AGREEMENT is made and entered into this ____ day of _____, 20__ by and between _____, a _____ organized and existing under the laws of the State of _____, ("Generator,") and _____, a _____ organized and existing under the laws of the State of _____ ("Transmission Provider "). Generator and Transmission Provider each may be referred to as a "Party," or collectively as the "Parties."

RECITALS

WHEREAS, Generator is proposing to develop a Facility or generating capacity addition to an existing Facility consistent with the Interconnection Request submitted by the Generator dated _____;

WHEREAS, Generator is proposing to establish an interconnection with the Transmission System; and

WHEREAS, Generator has submitted to Transmission Provider an Interconnection Request; and

WHEREAS, on or after the date when the Generator receives the Interconnection System Impact Study results, Generator has further requested that the Transmission Provider prepare an Optional Study;

NOW, THEREFORE, in consideration of and subject to the mutual covenants contained herein the Parties agree as follows:

- 1.0 When used in this agreement, with initial capitalization, the terms specified shall have the meanings indicated. Terms used in this agreement with initial capitalization but not defined in this Section 1 shall have the meanings specified in the Tariff.
 - 2.0 Generator elects and Transmission Provider shall cause an Optional Study consistent with Section 10.0 of these Interconnection Procedures to be performed in accordance with the Tariff.
 - 3.0 The scope of the Optional Study shall be subject to the assumptions set forth in Attachment A to this Agreement.
 - 4.0 The Optional Study shall be performed solely for informational purposes.
 - 5.0 The Optional Study report shall provide a sensitivity analysis based on the assumptions specified by the Generator in Attachment A to this Agreement. The Optional Study will identify the Transmission Provider Interconnection Facilities and the Network Upgrades, and the estimated cost thereof, that may be required to provide transmission service or interconnection service based upon the
-

assumptions specified by the Generator in Attachment A.

- 6.0 The Transmission Provider's good faith estimated cost for performance of the Optional Study is \$_____. The Transmission Provider's good faith estimate for the time of completion of the Optional Study is [insert date].

TO Position: The Generator shall pay the Transmission Provider the amount by which the estimated cost exceeds the deposit the Generator submitted with its Interconnection Request when it executes this Agreement.

Gen Position: Upon receipt of the Optional Study, the Transmission Provider shall charge and Generator shall pay the actual costs of the Optional Study.

Any difference between the initial payment and the actual cost of the study shall be paid by or refunded to the Generator, as appropriate.

- 7.0 Miscellaneous. [The Optional Study Agreement shall include standard miscellaneous terms including, but not limited to, indemnities, representations, disclaimers, warranties, governing law, amendment, execution, waiver, enforceability and assignment, that reflect best practices in the electric industry, and that are consistent with regional differences, applicable laws, and the organizational nature of each Party. All of these provisions, to the extent practicable, shall be consistent with the provisions of the Interconnection Procedures and the Interconnection and Operating Agreement.]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their duly authorized officers or agents on the day and year first above written.

[Transmission Provider]

[Generator]

By _____
Name (typed or printed):
Title:

By _____
Name (typed or printed):
Title

**Attachment A to
Optional
Study Agreement**

ASSUMPTIONS USED IN CONDUCTING THE OPTIONAL STUDY

[To be completed by Generator consistent with Section 10 of the
Interconnection Procedures.]

APPENDIX 6

SMALL GENERATOR EXPEDITED INTERCONNECTION STUDIES

Small Gen Position: Include this Small Generator Appendix.

State Commission Position: Do not include this Small Generator Appendix.

TO Position: No additional language needed: refer to TO Position in Section 14.

Permanent Network and Energy Resource Additions Feasibility Study

Feasibility Study analyses can generally be expedited by examining a limited contingency set that focuses on the impact of the small capacity addition on contingency limits in the vicinity of the capacity resource.

Linear analysis tools are used to evaluate the impact of a small capacity addition with respect to compliance with contingency criteria.

[Proposed Option: Where applicable, the capacity addition may be studied based on actual generation available to grid (real net generator impact -- not phantom impact) which may require the imposition of special operating conditions.]

Short circuit calculations are performed for small resource additions to ensure that circuit breaker capabilities are not exceeded.

In most cases, where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the Impact Study may be waived and the project will proceed directly to the Facilities Study.

Impact Study

Load deliverability will only be evaluated for sub-areas where margins are known to be limited. In most cases, the addition of small capacity resources will improve local deliverability margins. However, if sub-area margins are known to be limited, the impact of the new resource will be evaluated based on its impact on the contingencies limiting emergency imports to the sub-area.

Generation deliverability is tested using linear analysis tools. In most cases, small capacity additions will have no impact on generator deliverability in an area. If violations are observed, more detailed testing using AC tools is required.

Stability analysis is generally not performed for small capacity additions. If the capacity of an existing generating resource is increased by less than 20 MW through expansion of the Facility, stability will be evaluated for critical contingencies only if existing stability margins are small. New capacity resources of less than 20 MW will only be evaluated if they are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed during the Impact Study for small resource additions, taking into consideration all elements of the regional plan, to ensure that circuit breaker capabilities are not exceeded.

If no Transmission System facilities are required, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection Agreement

**Small Packaged and Micro Generators Interconnections --
Feasibility/Impact/ Facilities Studies (Interconnection Study)**

Only the following studies are performed unless the results of these studies warrant additional analysis.

For pre-certified Small Packaged and Micro Generators, if the generator does not exceed fifteen percent (15%) of the most recent peak load on the circuit at the point of interconnection or any capacity or load limiting device upstream, the Interconnection Study will be limited to this fifteen percent (15%) determination. The Interconnection Study, which shall include all previously interconnected Small Packaged and Micro Generators, may also include a certification by the generator of the pre-certification for interconnected operation.

For generators not pre-certified, or those above the fifteen percent (15%) threshold, the following applies:

Limited power flow analyses will be performed to ensure that local contingency criteria are not violated.

Load deliverability and generation deliverability tests are not performed for energy resources.

Stability analysis will only be performed if temporary energy-only resources are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed for small resource additions to ensure that circuit breaker capabilities are not exceeded.

Pre-certification for interconnected operation.

Systems meeting all applicable ANSI/IEEE, Underwriters Laboratories (or other approved national testing entity), and NFPA (National Electric Code) standards for interconnected generation. The Commission may promulgate additional pre-certification criteria. Transmission Providers may maintain and publish a list of pre-certified generation equipment.

APPENDIX 7

INTERCONNECTION AND OPERATING AGREEMENT



Generator Interconnection Products and Studies

Generator Interconnection Products and Studies ^{*}, ^{}**

Energy Resource (“ER”) Interconnection Service

The Product

Energy Resource interconnection service allows a Generator to connect its generating facility (the “Facility”) to the Transmission Provider’s transmission system and be eligible to deliver the Facility’s output using the existing firm or non-firm capacity of the Transmission Provider’s transmission system on an “as available” basis.⁸ To the extent a Generator wants to receive ER Interconnection Service, the Transmission Provider shall construct facilities consistent with the studies identified below.⁹ ER interconnection service does not in and of itself convey any transmission delivery service.

The Study

The study consists of short circuit/fault duty, steady state (thermal and voltage) and stability analyses. The short circuit/fault duty analysis would identify direct interconnection facilities required and the network upgrades necessary to address short circuit issues associated with the interconnection facilities. The stability and steady state studies would identify necessary upgrades to allow full output of the proposed Facility and would also identify the maximum allowed output, at the time the study is performed, of the interconnecting Facility without requiring additional network upgrades. The PJM procedure for evaluating ERs, appended hereto, represents an acceptable method for conducting such study.

* The definition, study requirements, or delivery implications associated with a given interconnection service product may have different implications in different regions of the country. To the extent that any party believes that this description of Interconnection Products and Studies should be modified to accommodate such differences, such party may make filings at FERC to the effect that the interconnection products in this description should be modified to accommodate such regional differences. The burden will be on the filing party to show that proposed modifications would result in interconnection service that is at least equivalent or superior to the services described herein.

** All rights and obligations referred to herein regarding interconnection to a transmission system are also intended to apply to interconnections to a distribution system. Distribution level interconnections, however, may include additional obligations and charges to be borne by the interconnecting Generator, as well as other rights associated with such services.

⁸ With respect to any Facility receiving ER Interconnection Service, “as available” means that congestion relief and curtailments associated with transmission delivery service will be based on the type of transmission delivery service ultimately obtained.

⁹ Any Facility receiving ER Interconnection Service is not precluded from later qualifying as a Network Resource by later requesting Network Resource Interconnection Service provided that the requirements for Network Resource Interconnection Service are met by such Facility. Furthermore, a network transmission customer may take delivery of the output of an ER Interconnection Service Facility as secondary service. The value of this ER Interconnection Service product may not be realized absent a market-based congestion management system.

The purpose of the analysis is to evaluate the proposed Facility against those planning criteria that are not observed in real time by the transmission system operator. In general, this requires analysis of short circuit, stability and multiple transmission and Facility outages, but does not include single contingencies. The Transmission Provider will be required to file procedures with the FERC to demonstrate that its procedures meet the design objectives described above, and receive FERC acceptance of such procedures. Studies of subsequent interconnection requests will assume the maximum allowed output of the ER generator in stability evaluations, provided that any upgrades initially required in order to qualify as an Energy Resource have been or will be constructed.

Delivery Service Implications

Under ER Interconnection Service, the interconnected Generator will be able to inject power from the Facility into and deliver power across the interconnecting Transmission Provider's transmission system on an "as available" basis up to the amount of MW's identified in the applicable stability and steady state studies to the extent the upgrades initially required to qualify for ER Interconnection Service have been constructed. Where eligible to do so (e.g., PJM, ISO-NE, NYISO), the interconnected Generator may place a bid to sell into the market up to the maximum identified Facility output, subject to any conditions specified in the interconnection service approval, and the Facility will be dispatched to the extent the Generator's bid clears. In all other instances, no transmission delivery service from the Facility is assured, but the interconnecting Generator may obtain point-to-point transmission delivery service or be used for secondary network transmission service, pursuant to the Transmission Provider's Open Access Transmission Tariff ("OATT"), up to the maximum output identified in the stability and steady state studies. In those instances, in order for the Generator to obtain the right to deliver or inject energy beyond the Facility's interconnection point or to improve its ability to do so, transmission delivery service must be obtained pursuant to the provisions of the Transmission Provider's OATT. The Generator's ability to inject its Facility output beyond the point of interconnection, therefore, will depend on the existing capacity of the Transmission Provider's transmission system at such time as a transmission service request is made that would accommodate such delivery.

Network Resource ("NR") Interconnection Service

The Product

The Transmission Provider must conduct the necessary studies and construct the network facilities needed to integrate the Generator's Facility (1) in a manner comparable to that in which the Transmission Provider integrates its generating facilities to serve native load customers, or (2) in an ISO or RTO with market based congestion management, in the same manner as all other Network

Resources. Network Resource Interconnection Service in and of itself does not convey any transmission delivery service.

The Study

The interconnection study for Network Resource Interconnection Service shall assure that the Generator's Facility meets the requirements for Energy Resource Interconnection Service and as a general matter, that such Facility interconnection is also studied with the Transmission Provider's transmission system at peak load, under a variety of severely stressed conditions, to determine whether, with the interconnecting Generator Facility at full output, the aggregate of generation in the local area can be delivered to the aggregate of load on the Transmission Provider's transmission system, consistent with the Transmission Provider's reliability criteria and procedures. This approach assumes that some portion of existing Network Resources are displaced by the output of the Generator's Facility. The PJM Generator Deliverability Procedure, appended hereto, represents an acceptable method for conducting such study. Transmission Providers will be required to file procedures with FERC to demonstrate that its procedures meet the design objectives described above, and receive FERC acceptance of such procedures. The foregoing study standard does not preclude a Transmission Provider from offering Network Resource Interconnection Service under a study standard less stringent than the PJM Generator Deliverability Procedure.¹⁰

The interconnecting Generator may request the studies associated with Network Resource Interconnection Service at the time of its interconnection application, together with its request(s) for study of other levels of interconnection service, and, following the completion of the requested facilities studies and subject to the construction of all necessary upgrades, may elect to proceed with Network Resource Interconnection Service or to proceed under a lower level of interconnection service to the extent that only certain upgrades will be completed.

There is no requirement either at the time of study or interconnection, or at any point in the future, that the interconnecting Generator's Facility be designated as a Network Resource by a network transmission customer or that the Generator identify a specific buyer (or sink). To the extent a Network Customer does designate the Facility as a Network Resource, it must do so pursuant to the Transmission Provider's OATT.

¹⁰ For example, satisfying a Minimum Interconnection Standard for New York ISO and for ISO New England, that is less stringent than the standard defined above for Network Resource Interconnection Service, allows any Generator in those markets to compete in the energy, capacity and ancillary service markets on an equal basis. In the case of the New York ISO, the issue of deliverability of capacity is sometimes addressed through locational capacity requirements. In PJM, satisfying the Energy Resource Interconnection Service standard allows the Generator's Facility to become a Network Resource for the purposes of the Energy market.

Delivery Service Implications:

Network Resource Interconnection Service allows the interconnecting Generator's Facility to be designated by any Network Customer on the Transmission Provider's transmission system as a Network Resource, up to the Facility's full output, on the same basis as all other existing Network Resources interconnected to the Transmission Provider's transmission system, and to be studied as a Network Resource on the assumption that such a designation will occur. Any Network Customer can utilize its network service to obtain delivery of energy from the interconnected Generator's Facility in the same manner as it accesses other Network Resources. A Facility receiving Network Resource Interconnection Service may also be used to provide ancillary services after technical studies and/or periodic analyses are performed with respect to the Facility's ability to provide any applicable ancillary service, provided that such studies and analyses have been or would be required in connection with the provision of such ancillary services by any existing Network Resource. In addition, in the event of transmission constraints on the Transmission Provider's transmission system, the Generator's Facility shall be subject to the applicable congestion management procedures in the Transmission Provider's transmission system in the same manner as all other Network Resources.¹¹

Once a Generator satisfies the requirements for obtaining Network Resource Interconnection Service, any future transmission service request for delivery from the Facility within the Transmission Provider's transmission system of any amount of capacity and/or energy, up to the amount initially studied, will not require that any additional studies be performed or that any further upgrades associated with such Facility be undertaken, regardless of whether or not such Facility is ever designated by a Network Customer as a Network Resource and regardless of changes in ownership of the Facility. Accordingly, to the extent the Generator subsequently enters into an arrangement for long term firm point to point transmission service for a term in excess of [_____]year(s)]¹² for deliveries from the Facility outside the Transmission Provider's transmission system, if the Generator subsequently requests that the amount of such point to point reserved capacity revert back to the amount of capacity initially studied in connection with the earlier request for the Network Resource Interconnection Service, such request may require additional studies and upgrades in order for the Transmission Provider to grant such request.

Depending on how the cost allocation issue is resolved, the interconnecting Generator

¹¹ If there is congestion, the Transmission Provider will relieve congestion by means including, but not limited to, the use of least cost redispatch, or otherwise consistent with such Transmission Provider's OATT.

¹² PJM and NEPOOL presently allow the Network Resource designation to remain in effect at least for three years following a cessation of operation of the Facility. In addition, PJM and NEPOOL do not remove such designation when the resource sells outside of the control area.

may be allocated congestion rights based on the construction of upgrades.

Optional Interconnection Service(s)

Interconnection service products are defined by the types of studies performed, and the level of system upgrades undertaken, in connection with a given request for interconnection service. For example, Energy Resource Interconnection Service and Network Resource Interconnection Service products are studied as set forth above. Other “optional” interconnection service products and the rights associated with such interconnection service products may also be defined to the extent alternative studies are undertaken. For example, even if a Facility is studied as a Network Resource, it may wish to construct only those upgrades that would allow the Generator to deliver the Facility’s output to a more limited number of delivery points. Agreement has not been reached in defining specific optional interconnection service products or with respect to what, if any, alternative studies a Transmission Provider would be willing to perform beyond the NR Interconnection Service or ER Interconnection Service study described above. If, however, a Transmission Provider does not agree to perform a given study, the Transmission Provider will, at the Generator’s option, provide the required data to perform such study to an appropriate third party under suitable confidentiality limitations.

GENERATOR INTERCONNECTION PRINCIPLES

ENERGY-ONLY RESOURCES

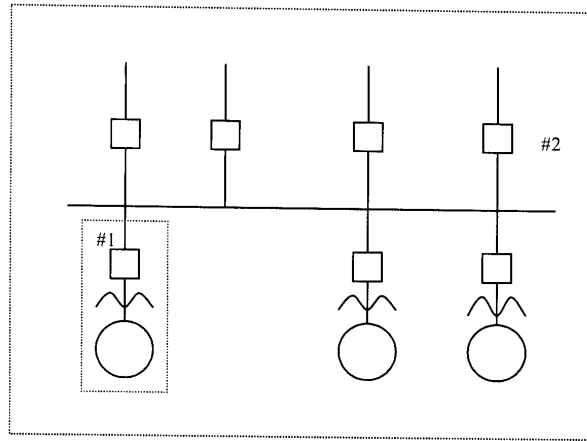
1. Under system normal conditions full generator capability must be able to be attached to the system interconnection point without exceeding normal ratings.
2. Under system normal conditions and at peak load all generators connected to the system interconnection point must be able to run at maximum capability without exceeding any normal ratings or voltage criteria.
3. Under peak load conditions and loss of any single transmission line, generating unit, transformer, bus, or circuit breaker the energy only generating unit(s) must be able to automatically reduce output or trip off in the appropriate time period, via a "special protection scheme" approved by MAAC, to alleviate exceeding any applicable emergency ratings of any facility or applicable voltage criteria.
4. Assuming all generating units in service, the short circuit duty of any circuit breaker will not be exceeded.
5. Stability requirements as defined in MAAC Reliability Principles and Standards, Part IV, will be met. Any "special protection schemes" required must be approved by MAAC.
6. Meet all applicable MAAC* and NERC standards.**

* MAAC criteria need to be reviewed to assure consistency with energy only interconnections.

** The generator must meet all applicable requirements relative to relaying and system protection.

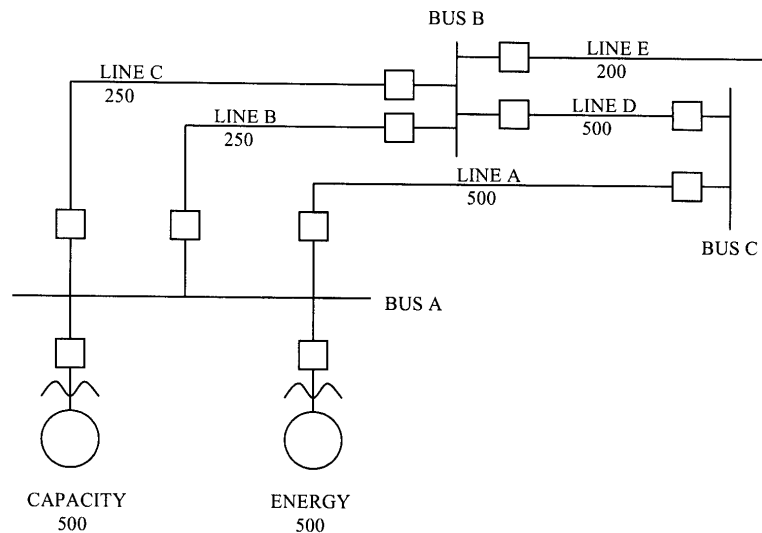
Note: The "energy only" megawatts must be included in the operating criteria. There may be a need for additional spinning or operating reserves to cover the loss of the "energy only" unit. Contingencies that trip the "energy only" resources must be included in EMS and in the calculation of IMP.

REQUIREMENTS #1 & #2



1. To meet requirement #1 all equipment shown as #1 must have normal ratings equal to or greater than the generator capability.
2. To meet requirement #2 the total normal MVA rating of the exiting facilities from the bus must be equal to or greater than the sum of the maximum generation capability connected to the bus. Loading patterns of the exiting facilities must be taken into account when determining the export capability.
3. If requirement #2 is eliminated, then the amount of generation allowed to enter the bus will be limited to the sum of the normal MVA capability of the lines exiting the bus.

REQUIREMENT #3



1. If line A is lost the energy only unit would need to be tripped.
2. If line B or C is lost the energy only unit would need to be reduced to 250MW within the appropriate time period or tripped if the reduction could not occur quickly enough.
3. If line D is lost the energy only unit must be reduced to 200MW, assuming system impedances will allow this flow pattern, within the appropriate time period or tripped if the reduction can not occur quickly enough.
4. If bus B is lost the energy only unit must be tripped.*

* Any special purpose relaying schemes must be approved by MAAC.

Generator Deliverability Procedure

1.0 Introduction

All generator interconnections in PJM require the performance of a MAAC Project Filing, demonstrating the generator's ability to be connected to the system consistent with the reliability criteria specified by MAAC. The procedures for preparing and submitting such a filing are under review. However, the tests required in such a MAAC Filing will continue to include the demonstration of deliverability, to ensure that the new generation resource can be certified as an installed capacity resource with respect to the PJM installed capacity obligations imposed through the Reliability Assurance Agreement. It is these obligations that ensure the compliance of the PJM Control Area with the reliability criteria specified by MAAC.

To maintain reliability in a competitive capacity market, resources must contribute to the deliverability of the Control Area in two ways. First, energy must be deliverable, from the aggregate of resources available to the Control Area, to load in portions of the Control Area experiencing a localized capacity emergency, or deficiency. PJM utilizes the CETO / CETL procedure to study this "deliverability of load". Second, capacity resources within a given electrical area must, in aggregate, be able to be exported to the remainder of the Control Area, which is experiencing a capacity emergency. PJM utilizes a Generator Deliverability procedure to study the "deliverability of individual generation resources". This document provides the procedure for Generator Deliverability.

2.0 Study Objectives

The goal of the PJM Generator Deliverability study is to determine if the aggregate of generators in a given Region can be reliably transferred to the remainder of PJM. Any generators requesting interconnection to PJM must be "deliverable" in order to be a PJM installed capacity resource.

3.0 General Procedures and Assumptions

PJM generation is divided into five Regions (see Attachment 1). Generators within each region are tested only under summer peak load conditions. The probability of all generation being available in an area and PJM being in a capacity emergency condition is highest in the summer period. Although capacity emergency conditions can occur at any time, the likelihood of all generation being available in a region and PJM being in a capacity emergency condition is lower at non-summer peak load levels. Therefore, other load levels are not evaluated. The PJM load will be modeled as per the latest PJM Load Forecast Report.

All generators in PJM are initially modeled in service at 90% of their installed capacity value to simulate the average PJM generator forced outage rate of 10%. If the resulting PJM interchange results in PJM exporting more than the net scheduled firm transmission service, the PJM generators not in the Region under study are uniformly decreased until the PJM interchange equals the net scheduled firm transmission service. The interchange is adjusted because all non-firm exports will be cut during a PJM capacity emergency condition. This is the "base system" for study.

Each Region is then studied to determine if there are problems delivering its internal generation to the network within the study region and to the rest of PJM when PJM is in a capacity emergency. This is accomplished through a two step process. The first step is a screening process using a multipurpose linear analysis tool to determine any potential overloads. The second step refines the results of the screening process and determines if an overload actually exists and, if so, to what extent.

Step 1: A simulation is performed by studying various combinations of a Region's generator outputs (MW) with each unit in the study area operating between 90% and 100% of its installed capacity rating and proportionately displacing the generation in the rest of PJM to maintain a constant net PJM interchange with the rest of the World. Generation output is only increased if the unit has a 5% or greater distribution factor on a monitored facility for a particular contingency (a 10% distribution factor cut-off is used for facilities connected to the 500 kV system). In essence, this simulates an electrical circle whose radius is dictated by the distribution factor. For each generation output combination, PJM's transmission system is analyzed to determine if normal or single contingency overloads occur. This process tests the ability to deliver the full installed capacity of each generator and each generating station in the region under study to the network within that region. It also tests the network's capability to accommodate delivering excess generation in the study region to the rest of PJM. For any identified overloads, all generators with a 5% or greater distribution factor are determined. Generators are then selected starting with the generator having the highest distribution factor and continuing in descending distribution factor order until the expected availability of the selected units is less than an 80/20 value (i.e. the probability of all selected units being available simultaneously is approximately 20%). A Monte-Carlo simulation is performed to determine the 80/20 expected value based on the specific unit forced outage rates.

Step 2: The potential overload is then replicated using AC analysis by increasing the identified generators in Step 1 to their installed capacity value. The normal or contingency condition is replicated to determine if an overload exists.

ATTACHMENT 1

Generator Deliverability Regional Definitions

- 1) Western Region – The area of PJM that is west of the boundary defined as:
 - Peckville – Blooming Grove 230 kV
 - Susquehanna – Wescosville 500 kV
 - Harwood – Siegfried 230 kV
 - Susquehanna – East Palmerton 230 kV
 - Frackville – Siegfried 230 kV
 - Juniata – Sunbury 500 kV
 - Lewistown – Juniata 230 kV
 - Keystone Juniata 500 kV
 - Conemaugh – Juniata 500 kV
 - Roxbury – Carlisle Pike 115 kV
 - Conemaugh – Hunterstown 500 kV
- 2) Central-South Region – The area of PJM that is south of the boundary defined as:
 - Brighton – Conastone 500 kV
 - Northwest – Conastone 230 kV (Circuit 1 & 2)
 - Raphael Rd. – Graceton 230 kV
- 3) Central-North Region – The area of PJM that is bounded to the west by the Western Region, bounded to the south by the Central-South Region, and bounded to the east as defined by the following circuits:
 - Kittatinny – Newton 230 kV
 - Kittatinny – Pohatcong 230 kV
 - Portland – Greystone 230 kV
 - Pequest River – Flanders 115 kV
 - Gilbert – Glen Gardner 230 kV
 - Gilbert – Morristown 230 kV
 - Alburdis – Branchburg 500 kV
 - Buxmont – Whippany 230 kV
 - Hosensack – Elroy 500 kV
 - Peach Bottom – Limerick 500 kV
 - Peach Bottom – Newlinville 230 kV
 - Peach Bottom – Keeney 500 kV
 - Graceton – Nottingham 230 kV
- 4) East-North Region – The area of PJM that is bounded to the east by the Central-North Region and bounded to the south as defined by the following circuits:
 - Branchburg – Elroy 500 kV
 - Branchburg – Pleasant Valley 230 kV
 - Clarksville – Windsor 230 kV
 - Trenton – Edison 138 kV (circuits 1 & 2)
 - East Windsor – Salem 500 kV
 - Cookstown – Lumberton 230 kV
- 5) East-South Region – The area of PJM that is bounded to the north by the East-North Region and bounded to the east by the Central-North Region.